Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Margaret Hoffman, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 5, 2004

Richard E. Greene
Regional Administrator
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear Mayor Greene:

As requested in your December 3, 2003 letter to Governor Rick Perry, please find enclosed additional information in support of the State of Texas' July 15, 2003, 8-hour ozone designation recommendation. We have analyzed the U.S. Environmental Protection Agency's (EPA) eleven exclusion criteria as they apply to the counties for which the EPA December tentative recommendation differed from the Texas recommendation. Our analysis based on the EPA recommended criteria supports our Governor's initial recommendation. The counties included in this analysis are Henderson, Hood, Hunt, Kaufman, and Rockwall for the Dallas/Fort Worth area and Comal, Guadalupe and Wilson for the San Antonio area. Ellis County is also included in this analysis at the request of our commission.

If you have any questions, please feel free to contact me at (512) 239-3900 or Herb Williams of my staff at (512) 239-5588.

Sincerely,

Margaret Hoffman

Margaret Hoffman
Executive Director

Enclosure

cc: The Honorable Rick Perry, Governor
Kathleen Hartnett White, Chairman, Texas Commission on Environmental Quality
R.B. (Ralph) Marquez, Commissioner, Texas Commission on Environmental Quality
Larry R. Soward, Commissioner, Texas Commission on Environmental Quality

Background information we requested at the meeting on Jan. 9th.
Tom
----- Forwarded by Thomas Diggs/R6/USEPA/US on 02/11/2004 01:00 PM -----
Herb Williams <HWILLIAM@tceq.state.tx.us>
02/09/2004 09:30 AM

To: Thomas Diggs/R6/USEPA/US@EPA
cc: Adam Bullock <ABULLOCK@tceq.state.tx.us>, Charles Rubick <CRubick@tceq.state.tx.us>, Dave Sullivan <DSULLIVA@tceq.state.tx.us>, Kathy Pendleton <KPENDLET@tceq.state.tx.us>, Morris Brown <MBROWN@tceq.state.tx.us>, Mary McGarry-Barber <MMCGARRY@tceq.state.tx.us>, Russell Nettles <RNETTLES@tceq.state.tx.us>
Subject: 8-hour Designation Additional Information

Tom:

By letter dated Feb. 6, 2004 (copy attached) Randy Wood sent Carl Edlund additional information in support of the Texas' 8-hour ozone designation recommendations. Specifically, the information was intended to address your request to us during our Jan. 9, 2004 meeting and includes the following:

* A summary table of data addressing the 11 criteria entitled "TCEQ's Evaluation Table of EPA's 8-hour Ozone Designation Boundary Guidance Exclusion Criteria" (this was also provided in Margaret Hoffman's Feb. 5, 2004 letter to Mayor Greene and will not be attached to this message),
* Maps of the locations for sources in the affected counties,
* Wind histograms for the affected counties,
* Emissions by category for both the base and future cases, and
* Traffic and commuting patterns for the SAN area.

Information of the applicability of NOx emission controls on electric generating units in Hood County has been previously provided.

I am attaching electronic copies of the above information that has not been previously provided. Since some of the files may be large, I may have to send several copies of this message to get all of the files transmitted.

If you have questions about any of the specific information you may contact the following staff depending on this item of interest>
Maps of locations of sources - Russ Nettles (512) 239-1493 or Adam Bullock (512) 239-5155
Wind Histograms - Dave Sullivan (512) 239-1623
Emissions by category - Kathy Pendleton (512) 239-1936 or Charlie Rubick (512) 239- 1478
Traffic and Commuting patterns - Mary McGarry-Barber (512) 239-1987.

If you have other questions please feel free to contact me.

Herb
(512) 239-5588

TCEQ Analysis of
EPA's 8-hour Ozone Designation Boundary Guidance Exclusion Criteria

Rationale for Analysis:
As stated in our October 16, 2003 letter providing additional information with regard to the Dallas/Fort Worth (DFW) and San Antonio (SA) areas, we in Texas have long held the position that it is not necessary to designate areas or counties as nonattainment to achieve the state's goals for air quality improvement and compliance with the National Ambient Air Quality Standards (NAAQS). Our state and local officials have not waited for nonattainment designations to adopt and implement emission reductions measures, many of which are being implemented in both the DFW and SA areas. Examples include statewide reductions in emissions from power plants, voluntary implementation of Vehicle Inspection and Maintenance (I&M) programs in many of the DFW area counties and actions under the Early Action Compact agreement in the SA area counties.

In support of the designation recommendations included in the Governor's July 15, 2003 letter to the U.S. Environmental Protection Agency (EPA), we have reviewed and analyzed the CAMX model's Anthropogenic Precursor Culpability Assessment (APCA) results as well as the eleven (11) criteria included in EPA's March 28, 2000 Boundary Guidance.

Beginning our analysis of the APCA results, we researched the Clean Air Act and EPA's actions to develop appropriate air quality impact levels to use as a basis for exclusion of counties from a designation of nonattainment. For 8-hour ozone impacts, we selected 2 ppb which is the level of impact used by EPA during their Ozone Transport Assessment Group's (OTAG) study that was the basis for the NOx SIP call as well as in the development of their recently proposed Interstate Air Quality Rule.

A copy of our summary of data addressing the 11 criteria is included in the attached table entitled "TCEQ's Evaluation Table of EPA's 8-hour Ozone Designation Boundary Guidance Exclusion Criteria". We are also providing copies of the background data from which the summaries in the attached table were developed. Based on our review of this information, we believe that certain of the criteria are more meaningful for decisions concerning designations because they are directly determinative of air quality in the area. These primary criteria were selected because of their direct indication of air quality (monitored data) or more direct impact on air quality (Base Case Emissions, Emissions Control & Regional Reductions, Emissions Growth Projections, and Mobile Source Emissions). However, information in the table and supporting data addresses each of the 11 criteria.

TCEQ Analysis Priority for EPA's 11 Exclusion Criteria:
We believe that certain of the EPA's 11 criteria when considered together are the most determinative of air quality; and therefore should have more relative weight in considering designation status. In our analysis described below, we have addressed those criteria in our order of priority.

TCEQ's Analysis of Other Information:
Other information including the CAMX model's Anthropogenic Precursor Culpability Assessment (APCA) technique which allows attribution of the various emission source categories and emission areas (including specific counties) impacts on ozone levels in an area of specific study is included in our analysis. For the DFW area, the APCA analysis was used to develop a culpability assessment of the impacts of the emissions from area counties and boundary conditions on the ozone levels in the DFW 4-County 1-hour nonattainment area during the August 15-22, 1999 Base Case episode. During this episode, the modeled 8-hour ozone level was 94.51ppb of which 32.01 ppb or 33.9% was attributable to boundary conditions associated with transported pollutants entering the modeling domain.

TCEQ's Priority Order of EPA's 11 Exclusion Criteria:

- Monitored data - an 8-hour design value below the standard of 85ppb.
- Base Case Emissions Data - For the 1999 Emissions Inventory data for each county, we reviewed their relative percent of the area's emissions totals. These percent of area total emissions were then analyzed in comparison to the ppb contribution estimates derived from the 1999 Base Case APCA analysis. Since the EPA has used the 2 ppb impact level in their OTAG study and in their recently proposed Interstate Air Quality Rule, we applied that same level of impact in our analysis.
- Emissions Control & Regional Reductions - the current and scheduled emissions controls should also be one of the primary determinative factors in assessing contributory impacts of the specific counties on the urban core. Many counties in the DFW area have implemented voluntary emissions controls such as the I&M programs mentioned above and are also subject to the Texas regional controls imposed on Power

Plants and Cement Plants as well as other area sources. Counties in the SA area have voluntarily joined Early Action Compact agreements which will result in the implementation of control measures necessary to attain the 8-hour ozone standard earlier than otherwise required by the normal designation process.

- Emissions Growth Projections - Emissions growth is projected to the potential attainment year and takes into consideration the current and scheduled emission reduction programs. For the future Emissions Growth Projection data for each county, we reviewed their relative percent of the area's emissions totals. These percent of area total emissions were then analyzed in comparison to the ppb contribution estimates derived from the 1999 Base Case APCA analysis. Where the APCA analysis is not available (San Antonio), we reviewed and included each county's projected emissions growth data and percent of area totals.
- Mobile Source Emissions (Traffic & Commuting Patterns) - mobile source emissions (as reflected by VMT and commuting workers) are a significant part of the base case and projected future emissions of these counties. For the VMT and commuting workers data for each county, we reviewed their relative percent of the area's totals.

While the remainder of EPA's 11 criteria and other pertinent information are important and will be considered as part of our analysis, we believe that they are not of the same priority as those mentioned above, and the effect of the remaining criteria are almost all incorporated into these primary criteria. The location and number of sources as well as population are implicitly included in the emissions data. All of the counties included in this analysis are primarily rural in nature and even though they may include some number of major sources, their overall emissions are still very low in comparison to the total emissions of the C/MSA. Populations in these counties are projected to grow, but projected population increases are low in terms of real increases and do not represent emission increases of concern. Emission growth projections also includes population growth. The only remaining criteria that may have an impact on air quality is meteorology, since this is a factor in determining the potential impact of a county's emissions on the urban core. However, its impact is primarily dependent on the emissions (base and future case) from the county because wind direction and other meteorological factors can result in impacts only to the extent the county's emissions are large enough to make a contribution to the area's air quality. The final 2 criteria (geography and jurisdiction boundaries) are not specifically addressed in this analysis because we believe that there are no significant geographical distinctions in the DFW and SA areas. Also, jurisdiction boundaries are not an issue because we have chosen to recommend designations on a whole county basis.

This analysis will address each county in the DFW and SA areas for which EPA's December 3, 2003 designation recommendation differed from the Governor's July 15, 2003 designation recommendation plus Ellis County.

This analysis addresses each of EPA's eleven 8-hour ozone designation boundary guidance exclusion criteria as they apply to Henderson, Hood, Hunt, Kaufman , Rockwall, and Ellis Counties in the DFW area and Comal, Guadalupe, and Wilson Counties in the SA area using the TCEQ suggested priority. Those criteria that are considered insignificant for a particular county may not be specifically addressed. EPA's eleven exclusion criteria as well as the TCEQ data to address these criteria and form the basis for our analysis are included in the attached table.

Dallas/Fort Worth Nonattainment Area (urban core): The following reference information is a total of the specifically listed data for the existing 1-hour ozone nonattainment counties. It is presented for comparison purposes with the individual counties addressed in the analysis. The urban core counties' data is also presented in comparison to the totals for all the counties in the DFW C/MSA.

Reference Information (Total of Collin, Dallas, Denton and Tarrant Counties)

- Area size - 3467 square miles
- 1999 NOx Emissions - 690 TPD (81.5% of area total), Density - 0.20 TPD/square mile
- 1999 VOC Emissions - 533 TPD (75.7% of area total), Density - 0.15 TPD/square mile
- 2000 Population - 4,589,769 (87.0% of area total, Density - 1323.8 persons/square mile
- Major Sources - 224
- 2000 VMT - 128,032,370
- Growth -
  - 2010 Population - 5,534,718 (87.8% of area total) - 1596.4 persons/square mile
  - 2010 NOx Emissions - 413 TPD (71.8% of area total) or -40.1%, Density - 0.12 TPD/square mile
  - 2010 VOC Emissions - 318 TPD (76.1% of area total) or -40.3%, Density - 0.09 TPD/square mile
- Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) and 2007 future case shows the following 8-hour ozone impacts for emissions from the four core counties.

Source Category	**1999 Base Case**
Biogenics	0.65 ppb (0.7%)
Major Points	3.83 ppb (3.83%)
OnRoad	18.90 ppb (20.0%)
Other Anthropogenic	12.47 ppb (13.2%)
Total	35.85 ppb (37.9%)

This Page Intentionally Left Blank

Henderson County:

TCEQ's Analysis of EPA's Exclusion Criteria -

- Monitored data - Henderson county does not have a monitor, but the nearest monitor in Kaufman County (which is primarily downwind of Henderson County during the ozone season) is well below the standard with an 8-hour ozone design value of 73 ppb. It is a primarily rural county with only 1.5% of the area population and a population density of 77.7 persons per square mile.
- Base Case Emissions Data - It had very low emissions of both NOx and VOC in 1999 - less than 3% of the area totals.
- Emissions Control & Regional Reductions - Its sources are subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - Its 2010 emissions growth projections show a decrease in NOx and VOC emissions of over 6% and 36%, respectively. With these decreases, its emissions for both pollutants will remain below 3% of the area total.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions each just barely over 1% of the area totals. The modeled 2010 VMT growth projections are still just barely over 1% of the area totals. Its working population and percent of commuting workers are also 1% or less of the area totals.
- Location of Sources - It only has 10 major sources or less than 4% of the area totals.
- Meteorology - Even though it is upwind of the urban core 31% of the time during the ozone season, its emissions are so low and it is located over 50 miles from the urban core, the potential for contribution to the ozone levels in the DFW area is insignificant.
- Density - The density of 1999 emissions and projected 2010 emissions for both NOx and VOC are very low with all of them being 0.02 TPD/square mile or below. The 2000 and 2010 projected population densities are also very low with both being under 100 persons/square mile.
- Other - Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) indicates that its potential contribution to the four urban core counties is extremely low at only 0.26 ppb or 0.28% of the area 8-hour ozone level. Since there are projected reductions in emissions for 2010, the APCA contribution assessment from Henderson County should be likewise reduced. In addition, Henderson County is located in a different Metropolitan Planning Organization than the other counties in the DFW C/MSA.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria- Size - 943 square miles

- Emissions (1999) -
  - NOx - 15 TPD (1.8% of total area emissions), Density - 0.01 TPD/square mile
  - VOC - 19 TPD (2.7% of total area emissions), Density - 0.02 TPD/square mile
- Population(2000) - 73,277 (1.5% of the area total), Density - 77.7 persons/square mile
- Monitored Data - this county does not have an 8-hour ozone monitor, but the nearest monitor with complete data in the DFW area is in Kaufman county with an 8-hour design value of 73ppb.
- Location of Sources - Number of major sources - 10 (3.7% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 1,769,049 MPD (1.2% of area total)
    - NOx Emissions - 5.8 TPD (1.1% of the area total)
    - VOC Emissions - 3.7 TPD (1.1% of the area total)
    - 2010 VMT Growth - 2,176,652 MPD (1.1% of area total)
  - Commuting patterns
    - Working Population - 32,155 (1.0% of area total)
    - Commuting Workers - 16,309 (0.5% of area total workers)
- Expected Growth(2010) -
  - Population - 85,950 (1.4% of area total) or + 17.3%, Density - 91.4 persons/square mile
  - NOx Emissions - 14 TPD (2.4% of area total) or -6.6%, Density - 0.01 TPD/square mile
  - VOC Emissions - 12 TPD (2.9% of area total) or -36.8%, Density - 0.01 TPD/square mile
- Meteorology - upwind of urban core 31% and downwind of urban core 2% of the time during April-October ozone season.

- Geography - No significant geographical features.
- Jurisdiction Boundaries - County boundary, not in same MPO as other DFW area counties.
- Emissions Control - TERP
- Regional Controls - All regional and statewide measures including, as applicable, Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

TCEQ's Other Analysis -

- Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) shows the following 8-hour ozone impacts for emissions from Henderson County.

Source Category	1999 Base Case
Biogenics	0.03 ppb (0.03%)
Major Points	0.05 ppb (0.05%)
OnRoad	0.07 ppb (0.07%)
Other Anthropogenic	0.11 ppb (0.12%)
Total	0.26 ppb (0.28%)

Hood County:

TCEQ's Analysis of EPA's Exclusion Criteria-

- Monitored data - Hood County's monitor has an 8-hour ozone design value of 84ppb which is below the standard. It is a primarily rural county with only 0.8% of the area population and a population density of 96.5 persons per square mile.
- Base Case Emissions Data - It had very low emissions of both NOx and VOC in 1999 - less than 4% each of the area totals
- Emissions Control & Regional Reductions - Its sources are subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - Its 2010 emissions growth projections show significant decreases in both NOx and VOC emissions by over 28% and 55%, respectively. With these decreases, its emissions for both pollutants will remain at or well below 4% of the area total.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions which are each well below 1% of the area totals. The modeled 2010 VMT growth projections are still well below 1% of the area totals. Its working population and percent of commuting worker are also well below 1% of the area totals.
- Location of Sources - It only has 2 major sources or less than 1% of the area totals.
- Meteorology - Since it is upwind of the urban core only 11% of the time during the ozone season and emissions are so low, the potential for contribution to the ozone levels in the DFW area is insignificant.
- Density - The density of 1999 emissions and projected 2010 emissions for both NOx and VOC are very low with all of them being 0.07 TPD/square mile or below. The 2000 and 2010 projected population densities are also low but with a slight increase from just under 97 to just over 116 persons/square mile.
- Other - Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) indicates that its potential contribution to the four urban core counties is extremely low at only 0.22 ppb or 0.23% of the area 8-hour ozone level. Since there are projected reductions in emissions for 2010, the APCA contribution assessment from Hood County should be likewise reduced.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria- Size - 426 square miles

- Emissions(1999) -
  - NOx - 28 TPD (3.3% of total area emissions), Density - 0.07 TPD/square mile
  - VOC - 9 TPD (1.2% of total area emissions), Density - 0.02 TPD/square mile
- Population(2000) - 41,100 (0.8% of the area total), Density - 96.5 persons/square mile
- Monitored Data - 8-hour ozone design value of 84ppb
- Location of Sources - Number of major sources - 2 (0.7% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 889,386 MPD (0.6% of area total)
    - NOx Emissions - 3.1 TPD (0.6% of the area total)
    - VOC Emissions - 2.0 TPD (0.6% of the area total)
    - 2010 VMT Growth - 1,176,516 MPD (0.6% of area total)
  - Commuting patterns
    - Working Population - 20,215 (0.6% of area total)
    - Commuting Workers - 10,446 (0.3% of area total workers)
- Expected Growth(2010) -
  - Population - 49,468 (0.7% of area total) or + 20.3%, Density - 116.1 persons/square mile
  - NOx Emissions - 20 TPD (3.5% of area total) or - 28.6%, Density - 0.05 TPD/square mile
  - VOC Emissions - 4 TPD (1.0% of area total) or -55.5%, Density - 0.01 TPD/square mile
- Meteorology - upwind of urban core 11% and downwind of urban core 19% of the time during April-October ozone season.
- Geography - No significant geographical features.
- Jurisdiction Boundaries - County boundary.
- Emissions Control - TERP
- Regional Controls - All regional and statewide measures including, as applicable, Cement Kiln NOx limits,

East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

TCEQ's Other Analysis -

- Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) shows the following 8-hour ozone impacts for emissions from Hood County.

Source Category	1999 Base Case
Biogenics	0.00 ppb (0.0%)
Major Points	0.20 ppb (0.21%)
OnRoad	0.01 ppb (0.01%)
Other Anthropogenic	0.01 ppb (0.01%)
Total	0.22 ppb (0.23%)

Hunt County:

TCEQ's Analysis of EPA's Exclusion Criteria-

- Monitored data - Hunt County's monitor does not have complete data, but the nearest monitor with complete data in Collin County (which is primarily downwind of Hunt County during the ozone season) is well below the standard with an 8-hour ozone design value of 80 ppb. It is a primarily rural county with only 1.5% of the area population and a population density of 92.7 persons per square mile.
- Base Case Emissions Data - It had very low emissions of both NOx and VOC in 1999 - less than 4% of the area totals
- Emissions Control & Regional Reductions - Its sources are subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - Its 2010 emissions growth projections show decrease in NOx and VOC emissions of over 36% and 48%, respectively. With these decreases, its emissions will fall to below and just above 3% for the area totals for NOx and VOC, respectively.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions each just less than 2% of the area totals. The modeled 2010 VMT growth projections are still well below 2% of the area totals. Its working population and percent of commuting worker are also 1% or less of the area totals.
- Location of Sources - It only has 2 major sources or less than 1% of the area totals.
- Meteorology - Even though it is upwind of the urban core 25% of the time during the ozone season, its emissions are so low, the potential for contribution to the ozone levels in the DFW area is insignificant.
- Density - The density of 1999 emissions and projected 2010 emissions for both NOx and VOC are very low with all of them being 0.03 TPD/square mile or below. The 2000 and 2010 projected population densities are also low, but with a slight increase from just under 93 to just under 112 persons/square mile.
- Other - Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) indicates that its potential contribution to the four urban core counties is extremely low at only 0.32 ppb or 0.34% of the area 8-hour ozone level. Since there are projected reductions in emissions for 2010, the APCA contribution assessment from Hunt County should be likewise reduced.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria - Size - 826 square miles

- Emissions(1999) -
  - NOx - 11 TPD (1.9% of total area emissions), Density - 0.01 TPD/square mile
  - VOC - 25 TPD (3.8% of total area emissions), Density - 0.03 TPD/square mile
- Population(2000) - 76,596 (1.5% of the area total), Density - 92.7 persons/square mile
- Monitored Data - this county does not have complete 8-hour ozone data, but the nearest monitor with complete data in Collin county with an 8-hour design value of 80ppb.
- Location of Sources - Number of major sources - 2 (0.7% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 2,646,452 MPD (1.8% of area total)
    - NOx Emissions - 8.2 TPD (1.6% of the area total)
    - VOC Emissions - 5.2 TPD (1.6% of the area total)
    - 2010 VMT Growth - 2,850,040 MPD (1.5% of area total)
  - Commuting patterns
    - Working Population - 41,004 (1.2% of area total)
    - Commuting Workers - 19,943 (0.6% of area total workers)
- Expected Growth(2010) -
  - Population - 92,237 (1.5% of area total) or + 20.4%, Density - 111.7 persons/square mile
  - NOx Emissions - 7 TPD (2.3% of area total) or -36.4%, Density - 0.01 TPD/square mile
  - VOC Emissions - 13 TPD (3.1% of area total) or -48.0%, Density - 0.02 TPD/square mile
- Meteorology - upwind of urban core 25% and downwind of urban core 8% of the time during April-October ozone season.
- Geography - No significant geographical features.

- Jurisdiction Boundaries - County boundary.
- Emissions Control - TERP
- Regional Controls - All regional and statewide measures including, as applicable, Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

TCEQ's Other Analysis -

- Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) shows the following 8-hour ozone impacts for emissions from Hunt County.

Source Category	1999 Base Case
Biogenics	0.07 ppb (0.07%)
Major Points	0.01 ppb (0.01%)
OnRoad	0.18 ppb (0.19%)
Other Anthropogenic	0.06 ppb (0.06%)
Total	0.32 ppb (0.34%)

Kaufman County:

TCEQ's Analysis of EPA's Exclusion Criteria-

- Monitored data - Kaufman County's monitor has an 8-hour ozone design value of 73ppb which is well below the standard. It is a primarily rural county with only 1.4% of the area population and a population density of 87.5 persons per square mile.
- Base Case Emissions Data - It had low emissions of both NOx and VOC in 1999 at and well below 4% of the area totals
- Emissions Control & Regional Reductions - Kaufman County voluntarily adopted emission control measures to reduce ground-level ozone including a vehicle Inspection and Maintenance program plus speed limit restrictions. These voluntary measures were part of the first such application in attainment areas in the country. Its sources are also subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - With projected growth to 2010 its emissions show a significant percent increase in NOx emissions at over 57%, but that increase is primarily related to point source increases from the permitting of electric power turbine facilities that are required to install BACT level controls. Even with this increase, the resulting NOx emissions are still less than 4% of the area total.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions each just over 2% of the area totals. The modeled 2010 VMT growth projections are still just above 2% of the area totals. Its working population and percent of commuting worker are just above and just below 1% of the area totals, respectively.
- Location of Sources - It only has 6 major sources or 2% of the area totals.
- Meteorology - Even though it is upwind of the urban core 61% of the time during the ozone season, its emissions are not likely to make a significant contribution to the urban core's 8-hour ozone levels.
- Density - The density of 1999 emissions and projected 2010 emissions for both NOx and VOC are very low with all of them being 0.04 TPD/square mile or below. The 2000 and 2010 projected population densities are also low, but with a slight increase from under 88 to just under 111 persons/square mile.
- Other - Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) indicates that its potential contribution to the four urban core counties is low at only 0.79 ppb or 0.83% of the area 8-hour ozone level. Even though there is a slight increase in NOx emissions projected for 2010 this minimal increase is not anticipated to significantly change the APCA contribution assessment from Kaufman County.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria - Size - 815 square miles

- Emissions(1999) -
  - NOx - 14 TPD (1.7% of total area emissions), Density - 0.02 TPD/square mile
  - VOC - 28 TPD (4.0% of total area emissions), Density - 0.03 TPD/square mile
- Population(2000) - 71,313 (1.4% of the area total), Density - 87.5 persons/square mile
- Monitored Data - 8-hour ozone design value of 73ppb
- Location of Sources - Number of major sources - 6 (2.2% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 3,506,272 MPD (2.4% of area total)
    - NOx Emissions - 12.0 TPD (2.4% of the area total)
    - VOC Emissions - 7.6 TPD (2.4% of the area total)
    - 2010 VMT Growth - 4,625,480 MPD (2.4% of area total)
  - Commuting patterns
    - Working Population - 42,855 (1.3% of area total)
    - Commuting Workers - 28,874 (0.9% of area total workers)
- Expected Growth(2010) -
  - Population - 90,416 (1.4% of area total) or + 26.8%, Density - 110.9 persons/square mile
  - NOx Emissions - 22TPD (3.8% of area total) or + 57.1%, Density - 0.03 TPD/square mile
  - VOC Emissions - 17 TPD (4.0% of area total) or - 39.3%, Density - 0.02 TPD/square mile
- Meteorology - upwind of urban core 61% and downwind of urban core 6% of the time during April-October ozone season.
- Geography - No significant geographical features.

- Jurisdiction Boundaries - County boundary.
- Emissions Control - I&M ASM with OBD, Speed limits and TERP
- Regional Controls - All regional and statewide measures including, as applicable, Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

TCEQ's Other Analysis -

- Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) shows the following 8-hour ozone impacts for emissions from Kaufman County.

Source Category	**1999 Base Case**
Biogenics	0.13 ppb (0.14%)
Major Points	0.00 ppb (0.0%)
OnRoad	0.46 ppb (0.49%)
Other Anthropogenic	0.20 ppb (0.21%)
Total	0.79 ppb (0.83%)

Rockwall County:

TCEQ's Analysis of EPA's Exclusion Criteria-

- Monitored data - Rockwall County's monitor has an 8-hour ozone design value of 81ppb which is below the standard. It is a primarily rural county with less 1.0% of the area population and a population density of 293.1 persons per square mile primarily because it is so small in area size. The vast majority of its population is located in the City of Rockwall (approximately 15,000) and that part of the City of Rowlett (approximately 38,000) that is in Rockwall County.
- Base Case Emissions Data - It had very low emissions of both NOx and VOC in 1999 - less than 1% and just above 2% of the area totals, respectively.
- Emissions Control & Regional Reductions - Rockwall County voluntarily adopted emission control measures to reduce ground-level ozone including a vehicle Inspection and Maintenance program plus speed limit restrictions. These voluntary measures were part of the first such application in attainment areas in the country. Its sources are also subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - Its 2010 emissions growth projections show significant decreases in both NOx and VOC emissions by over 33% and 69%, respectively. With these decreases, its emissions for both pollutants will fall to at or below 1% of the area totals.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions each at or below 1% of the area totals. The modeled 2010 VMT growth projections are still well below 1% of the area totals. Its working population and percent of commuting worker are both below 1% of the area totals.
- Location of Sources - It has no major sources.
- Meteorology - Even though it is upwind of the urban core 53% of the time during the ozone season, its emissions are so low, the potential for contribution to the ozone levels in the DFW area is insignificant.
- Density - The density of 1999 emissions and projected 2010 emissions for both NOx and VOC are very low with all of them being 0.08 TPD/square mile or below. The 2000 and 2010 projected population densities are higher than Henderson, Hood, Hunt and Kaufman Counties but are still low when compared to the densities of the DFW nonattainment counties. The overall population of Rockwall County is also extremely low (less than 1% of the area total), but the densities are elevated due to the small size of the county.
- Other - Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) indicates that its potential contribution to the four urban core counties is extremely low at only 0.32 ppb or 0.34% of the area 8-hour ozone level. Since there are projected reductions in emissions for 2010, the APCA contribution assessment from Rockwall County should be likewise reduced.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria - Size - 147 square miles

- Emissions(1999) -
  - NOx - 6 TPD (0.7% of total area emissions), Density - 0.04 TPD/square mile
  - VOC - 13 TPD (1.8% of total area emissions), Density - 0.08 TPD/square mile
- Population(2000) - 43,080 (0.8% of the area total), Density - 293.1 persons/square mile
- Monitored Data - 8-hour ozone design value of 81ppb
- Location of Sources - Number of major sources - None (0.0% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 1,404,142 MPD (0.9% of area total)
    - NOx Emissions - 4.8 TPD (0.9% of the area total)
    - VOC Emissions - 3.0 TPD (1.0% of the area total)
    - 2010 VMT Growth - 1,809,735 MPD (0.9% of area total)
  - Commuting patterns
    - Working Population - 28,258 (0.9% of area total)
    - Commuting Workers - 21,063 (0.6% of area total workers)
- Expected Growth(2010) -
  - Population - 56,336 (0.9% of area total) or + 30.8%, Density - 383.2 persons/square mile
  - NOx Emissions - 4 TPD (0.7% of area total) or -33.3%, Density - 0.03 TPD/square mile

- VOC Emissions - 4 TPD (1.0% of area total) or - 69.2%, Density - 0.03 TPD/square mile
- Meteorology - upwind of urban core 53% and downwind of urban core 7% of the time during April-October ozone season.
- Geography - No significant geographical features.
- Jurisdiction Boundaries - County boundary.
- Emissions Control - I&M ASM with OBD, Speed limits and TERP
- Regional Controls - All regional and statewide measures including, as applicable, Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

TCEQ's Other Analysis -

- Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) shows the following 8-hour ozone impacts for emissions from Rockwall County.

Source Category	**1999 Base Case**
Biogenics	0.04 ppb (0.04%)
Major Points	0.00 ppb (0.0%)
OnRoad	0.22 ppb (0.23%)
Other Anthropogenic	0.06 ppb (0.06%)
Total	0.32 ppb (0.34%)

Ellis County:

TCEQ's Analysis of EPA's Exclusion Criteria-

- Monitored data - The data from the Ellis County monitor is below the standard with an 8-hour ozone design value of 82 ppb. It is a primarily rural county with only 2.1% of the area population and a population density of 118.5 persons per square mile.
- Base Case Emissions Data - It had emissions of both NOx and VOC in 1999 of 6% and under 5% of the area totals for NOx and VOC, respectively.
- Emissions Control & Regional Reductions - Ellis County voluntarily adopted emission control measures to reduce ground-level ozone including a vehicle Inspection and Maintenance (I&M) program plus speed limit restrictions. These voluntary measures were part of the first such application in attainment areas in the country. Its sources are subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - With projected growth to 2010 its emissions show a percent increase in NOx emissions of over 13%, but that increase is primarily related to point source increases for which control programs are already in place including NOx controls for Power Plants and Cement Kilns. With this increase, the resulting NOx emissions will increase to just over 10% of the area totals.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions each just under 3% of the area totals. The modeled 2010 VMT growth projections are still just under 3% of the area totals. Its working population and percent of commuting workers are also less than 2% of the area totals.
- Location of Sources - It has 14 major sources or just over 5% of the area totals.
- Meteorology - Ellis County is upwind of the urban core 58% of the time during the ozone season.
- Density - The density of 1999 emissions and projected 2010 emissions for both NOx and VOC are low with all of them being 0.08 TPD/square mile or below. The 2000 and 2010 projected population densities are also low with both being under 150 persons/square mile.
- Other - Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) indicates that its potential contribution to the four urban core counties is 1.73 ppb or 1.83% of the area's 8-hour ozone level.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria - Size - 940 square miles

- Emissions(1999) -
  - NOx - 51 TPD (6.0% of total area emissions), Density - 0.05 TPD/square mile
  - VOC - 33 TPD (4.6% of total area emissions), Density - 0.03 TPD/square mile
- Population(2000) - 111,360 (2.1% of the area total), Density - 118.5 persons/square mile
- Monitored Data - 8-hour ozone design value of 82ppb
- Location of Sources - Number of major sources - 14(5.2% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 4,161,857 MPD (2.8% of area total)
    - NOx Emissions - 14.2 TPD (2.8% of the area total)
    - VOC Emissions - 9.0 TPD (2.8% of the area total)
    - 2010 VMT Growth - 5,260,034 (2.7% of the area total)
  - Commuting patterns
    - Working Population - 62,783 (1.9% of area total)
    - Commuting Workers - 37,330 (1.1% of area total workers)
- Expected Growth(2010) -
  - Population - 136,882 (2.2% of area total) or + 22.9%, Density - 145.6 persons/square mile
  - NOx Emissions - 58 TPD (10.1% of area total) or + 13.8%, Density - 0.06 TPD/square mile
  - VOC Emissions - 21 TPD (5.0% of area total) or - 34.4%, Density - 0.02 TPD/square mile
- Meteorology - upwind of urban core 58% and downwind of urban core 8% of the time during April-October ozone season.
- Geography - No significant geographical features.
- Jurisdiction Boundaries - County boundary.
- Emissions Control - I&M ASM with OBD, Speed limits, Cement Kiln NOx and TERP
- Regional Controls - All regional and statewide measures including Cement Kiln NOx limits, East Texas

EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

TCEQ's Other Analysis -

- Anthropogenic Precursor Culpability Assessment (APCA) using CAMx Modeling for the 1999 Base Case episode (August 15-22, 1999) shows the following 8-hour ozone impacts for emissions from Ellis County.

Source Category	1999 Base Case
Biogenics	0.14 ppb (0.15%)
Major Points	0.89 ppb (0.94%)
OnRoad	0.46 ppb (0.49%)
Other Anthropogenic	0.24 ppb (0.25%)
Total	1.73 ppb (1.83%)

Additional Ellis County Analysis:

Air Quality in Ellis County and the potential impact in the DFW area attributable to Ellis County emissions are the two primary considerations in determining that Ellis County is attainment or non-attainment.

The attached illustration (Chart #1) depicts Ellis County 8-hour design values and trends from 1998 through 2003. Calculated data for 2004 that would produce a 2004 design value of 85 ppb are also presented. The design value is the average of the fourth highest value for a 3-year period. The illustration provides significant meaningful information. It quite clearly shows that over the last 6 years, the trend of fourth highest value and the resulting design value has been downward.

Additional analysis of the transport of ozone and ozone precursors, confirms previous conclusions that the majority of 8-hour exceedance days occur with winds coming from the Northeast, East and Southeast. The attached chart (#2) provides a high level summary of this work.

Additional aircraft flights have been conducted to attempt to evaluate the potential impact of sources in Ellis County on ozone levels in the DFW area. Charts 3 through 6 depict ozone levels measured along the paths of those flights. Preliminary analysis of the data from these four flights does not provide the ability to determine the influence of Ellis County sources on ozone in the DFW area.

San Antonio Area: The following reference information is a total of the specifically listed data for the recommended nonattainment county (Bexar County) and is presented for comparison purposes with the individual counties addressed in the analysis. The Bexar County data is also presented in comparison to the totals for all the counties in the SA MSA.

Reference Information (Bexar County)

- Area size - 1246 square miles
- 1999 NOx Emissions - 235 TPD (83.6% of area total) or -30.6%, Density - 0.19 TPD/square mile
- 1999 VOC Emissions - 199 TPD (82.9% of area total) or -25.1%, Density - 0.16 TPD/square mile
- 2000 Population - 1,392,931 (87.5% of area total), Density - 1118.0 persons/square mile
- Major Sources - 43
- 2000 VMT - 35,951,128
- Growth -
    - 2007 Population - 1,487,221 (86.9% of area total), Density - 1193.6 persons/square mile
    - 2007 NOx Emissions - 163 TPD (80.7% of area total), Density - 0.13 TPD/square mile
    - 2007 VOC Emissions - 149 TPD (81.0% of area total), Density - 0.12 TPD/square mile

This Page Intentionally Left Blank

Comal County:

TCEQ's Analysis of EPA's Exclusion Criteria- Comal County is a member of the San Antonio Area Early Action Compact (EAC) which is committed to accomplishing emission reductions earlier than would otherwise be required under a traditional designation approach. This analysis is based on the county's continued participation in the EAC and failure to do so, may result in a revision of this analysis.

- Monitored data - Comal County's monitor does not have complete data, but the nearest monitor with complete data in eastern Bexar County (which is downwind of Comal County during about 1/3 of the ozone season) is well below the standard with an 8-hour ozone design value of 78ppb. It is a primarily rural county with only 4.9% of the area population and a population density of 137.6 persons per square mile.
- Base Case Emissions Data - It had low emissions of both NOx and VOC in 1999 - less than 9% and 6% of the area totals, respectively.
- Emissions Control & Regional Reductions - Its sources are subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - With projected growth to 2007, its emissions will decrease in both NOx and VOC emissions by over 12% and 14%, respectively.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions each just over 7% of the area totals. The modeled 2007 VMT growth projections are still just over 7% of the area totals. Its working population and percent of commuting worker are just above and below 6% and 4% of the area totals, respectively.
- Location of Sources - It has 7 major sources or 12.3% of the area totals.
- Meteorology - Even though it is upwind of the urban core 36% of the time during the ozone season, its emissions are low enough such that the potential for contribution to the ozone levels in Bexar County is insignificant.
- Density - The density of 1999 emissions and projected 2007 emissions for both NOx and VOC are very low with all of them being 0.04 TPD/square mile or below. The 2000 and 2007 projected population densities are also low but with a slight increase from just under 138 to just over 152 persons/square mile.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria - Size - 567 square miles

- Emissions(1999) -
  - NOx - 24 TPD (8.5% of total area emissions), Density - 0.04 TPD/square mile
  - VOC - 14 TPD (5.8% of total area emissions), Density - 0.02 TPD/square mile
- Population (2000) - 78,021 (4.9% of the area total), Density - 137.6 persons/square mile
- Monitored Data - this county does not have complete 8-hour ozone data, but the nearest monitor with complete data in eastern Bexar county had a 78ppb.
- Location of Sources - Number of major sources - 7 (12.3% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 3,008,128 MPD (7.1% of area total)
    - NOx Emissions - 10.4 TPD (7.1% of the area total)
    - VOC Emissions - 6.6 TPD (7.1% of the area total)
    - 2007 VMT Growth - 3,831,663 MPD (7.4% of area total)
  - Commuting patterns
    - Working Population - 48,276 (6.1% of area total)
    - Commuting Workers - 28,845 (3.7% of area total workers)
- Expected Growth(2007) -
  - Population - 88,543 (5.2% of area total) or + 13.5%, Density - 156.2 persons/square mile
  - NOx Emissions - 21 TPD (10.4% of area total) or - 12.5%, Density - 0.04 TPD/square mile
  - VOC Emissions - 12 TPD (6.5% of area total) or - 14.3%, Density - 0.02 TPD/square mile
- Meteorology - upwind of urban core 36% and downwind of urban core 11% of the time during April-October ozone season.
- Geography - No significant geographical features.
- Jurisdiction Boundaries - County boundary.
- Emissions Control - EGU NOx, Cement Kiln NOx, TERP

- Regional Controls - All statewide measures including, as applicable, Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

Guadalupe County:

TCEQ's Analysis of EPA's Exclusion Criteria- Guadalupe County is a member of the San Antonio Area Early Action Compact (EAC) which is committed to accomplishing emission reductions earlier than would otherwise be required under a traditional designation approach. This analysis is based on the county's continued participation in the EAC and failure to do so, may result in a revision of this analysis.

- Monitored data - Guadalupe County's monitor does not have complete data, but the nearest monitor with complete data in eastern Bexar County (which is downwind of Guadalupe County during the ozone season) is well below the standard with an 8-hour ozone design value of 78ppb. It is a primarily rural county with only 5.6% of the area population and a population density of 124.7 persons per square mile.
- Base Case Emissions Data - It had low emissions of both NOx and VOC in 1999 - less than 7% and 10% of the area totals, respectively
- Emissions Control & Regional Reductions - Its sources are subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - With projected growth to 2007 its emissions will decrease in both NOx and VOC emissions by over 16% and 18%, respectively.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions each under 7% of the area totals. The modeled 2007 VMT growth projections are still just under 7% of the area totals. Its working population and percent of commuting worker are just above 6% and 4% of the area totals, respectively.
- Location of Sources - It has 7 major sources or 12.3% of the area totals.
- Meteorology - Even though it is upwind of the urban core 60% of the time during the ozone season, its emissions are low enough such that the potential for contribution to the ozone levels in Bexar County is insignificant.
- Density - The density of 1999 emissions and projected 2007 emissions for both NOx and VOC are very low with all of them being 0.03 TPD/square mile or below. The 2000 and 2007 projected population densities are also low but with a slight increase from just under 125 to just over 138 persons/square mile.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria - Size - 714 square miles

- Emissions(1999) -
  - NOx - 18 TPD (6.4% of total area emissions), Density - 0.02 TPD/square mile
  - VOC - 22 TPD (9.2% of total area emissions), Density - 0.03 TPD/square mile
- Population(2000) - 89,023 (5.6% of the area total), Density - 124.7 persons/square mile
- Monitored Data - this county does not have complete 8-hour ozone data, but the nearest monitor with complete data in eastern Bexar county had a 78ppb.
- Location of Sources - Number of major sources - 7 (12.3% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 2,733,878 MPD (6.4% of area total)
    - NOx Emissions - 9.5 TPD (6.5% of the area total)
    - VOC Emissions - 6.0 TPD (6.4% of the area total)
    - 2007 VMT Growth - 3,433,412 MPD (6.6% of area total)
  - Commuting patterns
    - Working Population - 49,549 (6.3% of area total)
    - Commuting Workers - 32,203 (4.1% of area total workers)
- Expected Growth(2007) -
  - Population - 98,811 (5.8% of area total) or + 11.0%, Density - 138.4 persons/square mile
  - NOx Emissions - 15 TPD (7.4% of area total) or - 16.7%, Density - 0.02 TPD/square mile
  - VOC Emissions - 18 TPD (9.8% of area total) or - 18.2%, Density - 0.03 TPD/square mile
- Meteorology - Upwind of the urban core 60% and downwind of urban core 4% of the time during April-October ozone season.
- Geography - No significant geographical features.
- Jurisdiction Boundaries - County boundary.
- Emissions Control - TERP

- Regional Controls - All statewide measures including, as applicable, Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

Wilson County:

TCEQ's Analysis of EPA's Exclusion Criteria- Wilson County is a member of the San Antonio Area Early Action Compact (EAC) which is committed to accomplishing emission reductions earlier than would otherwise be required under a traditional designation approach. This analysis is based on the county's continued participation in the EAC and failure to do so, may result in a revision of this analysis.

- Monitored data - Wilson County does not have a monitor, but the nearest monitor with complete data in eastern Bexar County (which is downwind of Wilson County over 80% of the time during of the ozone season) is well below the standard with an 8-hour ozone design value of 78ppb. It is an overwhelmingly rural county with only 2.0% of the area population and a population density of 40.4 persons per square mile.
- Base Case Emissions Data - It had extremely low emissions of both NOx and VOC in 1999 - at 1% and just over 2% of the area totals, respectively
- Emissions Control & Regional Reductions - Its sources are subject to the applicable statewide and regional controls including Cement Kiln NOx limits, East Texas EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.
- Emissions Growth Projections - The 2007 emissions growth projections show a slight decrease in NOx emissions of 1% and zero percent change in VOC emissions.
- Mobile Source Emissions (Traffic & Commuting Patterns) - It has 2000 VMT and NOx and VOC mobile source emissions each under 2% of the area totals. The modeled 2007 VMT growth projections are still under 2% of the area totals. Its working population and percent of commuting workers are both below 2% of the area totals, respectively.
- Location of Sources - It has no major sources.
- Meteorology - Even though it is upwind of the urban core 83% of the time during the ozone season, its emissions are so low that the potential for contribution to the ozone levels in Bexar County is insignificant.
- Density - The density of 1999 emissions and projected 2007 emissions for both NOx and VOC are very low with all of them being 0.006 TPD/square mile or below. The 2000 and 2007 projected population densities are also very low with both being under 50 persons/square mile.

TCEQ's Summary of Data Addressing EPA's Exclusion Criteria - Size - 802 square miles

- Emissions(1999) -
  - NOx - 4 TPD (1.4% of total area emissions), Density - 0.005 TPD/square mile
  - VOC - 5 TPD (2.1% of total area emissions), Density - 0.006 TPD/square mile
- Population(2000) - 32,408 (2.0% of the area total), Density - 40.4 persons/square mile
- Monitored Data - this county does not have an 8-hour ozone monitor, but the nearest monitor with complete data in eastern Bexar county had a 78ppb.
- Location of Sources - Number of major sources - None (0.0% of the area total)
- Traffic & Commuting patterns -
  - Traffic
    - 2000 VMT - 759,319 MPD (1.8% of area total)
    - NOx Emissions - 2.6 TPD (1.8% of the area total)
    - VOC Emissions - 1.7 TPD (1.8% of the area total)
    - 2007 VMT Growth - 947,508 MPD (1.8% of area total)
  - Commuting patterns
    - Working Population - 15,057 (1.9% of area total)
    - Commuting Workers - 10,521 (1.3% of area total workers)
- Expected Growth (2007) -
  - Population - 36,677 (2.1% of area total) or + 13.2%, Density - 45.7 persons/square mile
  - NOx Emissions - 3 TPD (1.5% of area total) or -25.0%, Density - 0.003 TPD/square mile
  - VOC Emissions - 5 TPD (2.7% of area total) or 0.0%, Density - 0.006 TPD/square mile
- Meteorology - Upwind of the urban core 83% and downwind of urban core 2% of the time during April-October ozone season.
- Geography - No significant geographical features.
- Jurisdiction Boundaries - County boundary.
- Emissions Control - TERP
- Regional Controls - All statewide measures including, as applicable, Cement Kiln NOx limits, East Texas

EGU NOx limits, low emission diesel fuel, Stage I vapor recovery, Grandfathered Pipeline facility NOx limits, gas-fired water heater NOx limits, California Spark-Ignition Engine requirements, Low RVP gasoline, TERP, SB7 Utility NOx limits, VERP and MPP for Grandfathered facilities, and HB2912 Grandfathered facility permitting requirements-10 year old BACT.

TCEQ's Evaluation Table of EPA's 8-hour Ozone Designation Boundary Guidance Exclusion Criteria

The following tables are intended to evaluate each county in the Dallas/Fort Worth and San Antonio areas that may be subject to a nonattainment designation for EPA's 8-hour ozone standard. They are arranged by existing 1-hour nonattainment area and/or C/MSA and includes some adjacent counties that EPA will likely suggest should be included in any nonattainment recommendation. Each table is arranged in the order of the exclusion criteria listed in EPA's March 28, 2000 Boundary Guidance as summarized on the attached page. Each criteria has been designated by a unique identifier (such as E1 designates the first listed exclusion criteria - "Emissions and air quality...") and at least one column on the table has been identified as addressing that criteria.

Legend:

- E1 data (emissions) are based on 1999 Emissions Inventory data average ozone season weekday
- E2 data (population) is April, 2000 population figures from the U.S. Census Bureau
- E3 data is based on the monitoring data for 2001-2003. The value shown is the "area design value," a statistic calculated from the observed ozone data and compared with the level of the national ambient air quality standard (NAAQS) (85 parts per billion (ppb)) to determine compliance or severity of noncompliance. Using hourly average ozone measurements at each of the state's approximately 80 ozone monitors, rolling eight-hour average ozone concentrations are calculated, and the maximum value for each day is used to determine daily exceedances of the level of the NAAQS. If any monitor within an urban area exceeds the NAAQS on a day, that day is termed "an 8-hr exceedance day." At the end of the calendar year, the fourth highest 8-hr average at each site is averaged with the fourth highest value from each of the two preceding years to calculate the monitor's design value. Within an urban area, the maximum monitor design value is the area design value. Note that in calculating rolling 8-hour averages and three-year design values, numbers resulting from calculation are truncated to integer ppb units.
- E4 Location of emission sources - number of EI accounts in each county which is a close approximation of the number of major VOC and/or NOx sources in each county
- E5 data (traffic and commuting patterns) columns are as follows:
  - 2000 VMT is fromTxDOT RIFCREC reports, based upon historical HPMS AADT VMT, VMT is adjusted to represent a daily average for Monday through Friday during the ozone season
  - Future VMT (2010 or 2007) is a forecast based upon historical HPMS AADT VMT and Population projections from Texas State Data Center (scenario 0.5)
  - 2010 or 2007 VMT % is % of total VMT in the area.
  - 2000 Working Population is total working population living or working in the county
  - 2000 Commuting Workers is total working population commuting into and out of the county
  - % Commuting is % of the total commuting working population that commutes into or out of the county.
- E6 data (expected growth patterns) is population growth projections to the year nearest the anticipated attainment date for the area provided by the Texas State Data Center, Emissions growth projections were developed by the Technical Analysis Division and are a projected tons per day rate based on the average ozone season weekday and they are projected to the earliest

Legend (Continued)

potential attainment date for the specific area should it be designated as non-attainment.

- E7 (meteorology) - The meteorology factors are as follows:
  - Factor 1 = (Harris, Brazoria, Galveston, Jefferson) Proximity to coast results in flow reversals which recirculate polluted air parcels. Incoming sea breeze front in afternoon can compress pollutants in front of it. (10 - 20 days per year)
  - Factor 2D = Downwind of large industrial and urban source areas this percent.
    For each county, we combined all peak ozone season (April through October) afternoon (11:00 - 17:59 CST) hourly readings for resultant wind directions (with corresponding resultant wind speeds of 10 miles per hour or less) from TCEQ and local program monitors operating from 1999 through 2002, and calculated the percent of winds falling into each of 12 wind direction bins (0 to 30 deg. = NNE, 30 to 60 deg. = NE, etc.). We compared these fractions with the geometric positioning of suburban and exurbia counties to the urban counties in each MSA/CMSA to estimate the approximate percent of time that each less-urban county was downwind of the urban county or counties.
    Scale: **L**ow<10%, **M**edium 10-20%, **H**igh>20%.
  - Factor 2U = Percent of time a county is upwind of any part of the most urban county in the area using afternoon (11:00 CST - 17:59 CST) hourly data from April-October, 1999-2002, wind speeds (resultant) <= 10mph. Scale: **L**ow<33%, **M**edium 34-55%, **H**igh ≥ 56%.
  - Factor 3 = Frequent light winds and sunny skies under high pressure domes in summer.
  - Factor 4 = Occasional (10 - 20 days per year) effects of pollution transport from Upper Gulf Coast when high pressure center is to the east.
  - Factor 5 = Occasional (10 - 20 days per year) effects of pollution transport from Midwestern-Southeastern regions when high pressure center is in central U.S. ("Continental air")
  - Factor 6 = (El Paso) Frequent inversions trap primary pollutants close to the ground until late in the morning, allowing more time for photochemistry to produce ozone.
  - Factor 7= (El Paso) Differential heating and cooling along the river cause flow reversals to recirculate polluted air along the river valley.
- E8 (geography) is a brief description of potential air quality impacts based on location and geography of the county
- E9 (jurisdictional boundaries) are county boundaries
- E10 (Emissions control) are identified in more detail in the attached tables and the specific control item legend is located on the following page
- E11 (Regional reductions) are identified in more detail in the attached tables and the specific control item legend is located on the following page

E10 Emission Controls Legend

IM1 or IM2 - Vehicle Inspection/Maintenance with ASM, OBD and LIRAP. The number indicate the phase of implementation

SL - Speed Limit Reduction

IDL - Vehicle Idling Restrictions

S2 - Stage II Vapor Recovery

VMEP - Voluntary Mobile Emissions Reduction Program

TCM - Transportation Control Measures

GSE - Airport Agreement Reductions/ Ground Support Equipment Electrification

TERP - Texas Emissions Reduction Plan

SDE - Stationary Diesel Engines

L&G - Small, Spark-Ignition Engine Operating Restrictions/ Lawn & Garden Rule

NOx - Point source NOx Reductions

B&T - Emissions Bank and Trade Program

HRVOC - Highly Reactive VOC's

IM-TSI - Vehicle I&M with 2-speed idle and OBD without LIRAP

RVP - Clean Gasoline

EAST, SW & TXU - Control measures at Texas Eastman, SWEPCO and TXU as part of Northeast Texas FAR

O3FLEX - Control measures under Ozone Flex Plan Agreements

VERP - ALCOA's voluntary emissions reduction plan

ALCOA - Reductions from AlCOA enforcement action/settlement; under negotiation.

E11 Regional Reductions Legend

CK(%) - Cement Kiln NOx limits with % reductions

EASTNOx - Electric Generating Facilities subject to NOx Emission Rules for boilers & gas turbines

Eastern Texas Regionwide - Includes the following in all areas EXCEPT EL PASO, but not listed in the table due to broad applicability:

- Texas Low Emission Diesel
- Stage 1 Vapor Recovery
- HB2914 - Grandfathered Pipeline Facilities (50% NOx reduction, may require up to 20% in west Texas)

Statewide - Includes the following, but are not listed in the table due to statewide applicability:

- Cement Kiln NOx limits (CK)
  - 27% reduction Statewide (50% Ellis County only) by 2004
- Gas-fired Water Heaters, Small Boilers, and Process Heaters
  - Effective beginning 2002 on all new installations
- California Spark-Ignition Engines (effective 2004 model year)
- Low RVP "Clean" Gasoline
  - 7.8 psi (except El Paso) effective May- October
- Legislation
  - SB5 - TERP
    - In Non-attainment and near-nonattainment areas only
    - Contingent upon program funding
    - Exact NOx reductions depend on specific local uses of grants
      - Goal of 18.90 tpd in HGA + 20 tpd for gap
      - Goal of 16.3 in tpd DFW
  - SB7 - Electric Utility Deregulation
    - By May 2003 permit & 50% NOx reduction from 1997 levels
    - Cap & Trade system statewide
  - SB766 - VERP & MPP for Grand fathered Facilities
  - HB2912 - Grandfathered Permitting Requirements
    - Permit or cease operation by 2003
    - 10 year BACT by 2007 (2008 if small business)

8-hour Ozone Designation EPA's Exclusion Criteria Table

Dallas/Fort Worth 1-hour Ozone Nonattainment Area and CMSA

County	Nox-TPD (%) (E1)	VOC-TPD (%) (E1)	Population (%) (E2)	8hr DV (E3)	Source Location (%) (E4)	2000 VMT/% (E5)	2010 VMT / % Change (E5)	2010 VMT % Total (E5)
Dallas	349 (41.2)	269 (384.)	2,218,899(42.4)	90	108(39.9)	65,721,032/44.3	83,383,695/26.9	42.7
Tarrant	225 (26.6)	177 (25.3)	1,446,219(27.7)	100	87(32.1)	41,254,510/27.8	56,120,941/36.0	28.8
Ellis	51 (6.0)	32 (4.6)	111,360(2.1)	82	14(5.2)	4,161,857/2.8	5,260,034/26.4	2.7
Collin	62 (7.3)	44 (6.3)	491,675(9.4)	88	15(5.5)	11,191,486/7.5	15,813,760/41.3	8.1
Denton	54 (6.3)	43 (6.1)	432,976(8.3)	97	14(5.2)	9,865,355/6.6	14,265,701/44.6	7.3
Hood	28 (3.3)	9 (1.2)	41,100(0.8)	84	02(0.7)	889,386/0.6	1,176,516/32.3	0.6
Johnson	18 (2.1)	20 (2.8)	126,811(2.4)	90	04(1.5)	3,060,528/2.1	3,883,010/26.9	2.0
Parker	14 (1.7)	21 (3.0)	88,495(1.7)	89	09(3.3)	2,905,215/2.0	3,745,446/28.9	1.9
Henderson	15 (1.8)	19 (2.7)	73,277(1.5)	no data	10(3.7)	1,769,049/1.2	2,176,652/23.0	1.1
Kaufman	14 (1.7)	28 (4.0)	71,313(1.4)	73	06(2.2)	3,506,272/2.4	4,625,480/31.9	2.4
Hunt	11 (1.9)	25 (3.8)	76,596(1.5)	no data	02(0.7)	2,646,452/1.8	2,850,040/7.6	1.5
Rockwall	6 (0.7)	13 (1.8)	43,080(0.8)	81	-0-(0)	1,404,142/0.9	1,809,735/28.9	0.9
Totals	**847 (100)**	**700 (100)**	**5,221,801(100)**		**271(100)**	**148,375,284**	**195,111,009/31.5**	**100**

8-hour Ozone Designation EPA's Exclusion Criteria Table

Dallas/Fort Worth 1-hour Ozone Nonattainment Area and CMSA - Continued

County	2000 Working Population (%) (E5)	2000 Commuting Workers (E5)	% Commuting (E5)	Population Growth-2010/%+ (%) (E6)	Emissions Growth-NOx-TPD 2010/% Change (%) (E6)	Emissions Growth-VOC-TPD 2010/% Change (%) (E6)
Dallas	1,490,658(45.3)	585,279	17.8	2,579,566/16.2(40.9)	195 /-44.1(33.9)	155 /-42.4 (36.9)
Tarrant	841,692(25.6)	307,538	9.3	1,674,540/15.8(26.6)	143 /-36.4 (24.9)	114 /-35.6 (27.1)
Ellis	62,783(1.9)	37,330	1.1	136,882/22.9(2.2)	58 /+13.8(10.1)	21 /-34.4 (5.0)
Collin	343,762(10.4)	215,491	6.5	672,405/36.8(10.7)	44 /-29.0(7.7)	28 /-36.4 (6.6)
Denton	273,147(8.3)	169,549	5.1	608,207/40.5(9.6)	31 /-42.6(5.4)	31 /-27.9(7.4)
Hood	20,215(0.6)	10,446	0.3	49,468/20.3(0.7)	20 /-28.6 (3.5)	4 /-55.5 (1.0)
Johnson	66,170(2.0)	41,427	1.3	153,784/21.3(2.4)	19 /+5.5 (3.3)	12 /-40.0 (2.9)
Parker	48,218(1.5)	31,544	1.0	106,624/20.5(1.7)	18 /+28.6(3.1)	9 /-57.1 (2.1)
Henderson	32,155(1.0)	16,309	0.5	85,950/17.3(1.4)	14 /-6.6(2.4)	12 /-36.8 (2.9)
Kaufman	42,855(1.3)	28,874	0.9	90,416/26.8(1.4)	22 /+57.1(3.8)	17 /-39.3 (4.0)
Hunt	41,004(1.2)	19,943	0.6	92,237/20.4(1.5)	7 /-36.4(2.3)	13 /-48.0 (3.1)
Rockwall	28,258(0.9)	21,063	0.6	56,336/30.8(0.9)	4 /-33.3(0.7)	4 /-69.2 (1.0)
Totals	**3,290,918(100)**	**1,484,784**	**45.1**	**6,306,415/20.8(100)**	**575 /-32.1(100)**	**420 /-40.0 (100)**

8-hour Ozone Designation EPA's Exclusion Criteria Table

Dallas/Fort Worth 1-hour Ozone Nonattainment Area and CMSA - Continued

County	Meteorology (E7)	Geography (E8)	Boundaries (E9)	Emission Controls (E10)	Regional Reductions (E11)
Dallas	Factors 3, 4 & 5	No significant effect.	County	IM1, SL, S2, VMEP, TCM, GSE, TERP, NOx	All Regional and statewide measures
Tarrant	Factors 3, 4 & 5	No significant effect.	County	IM1, SL,S2, VMEP, TCM, GSE, TERP, NOx	All Regional and statewide measures
Ellis	Factors 2D(8%)**L**, 2U(58%)**H**, 3, 4 & 5	No significant effect.	County	IM2, SL, TERP, CK50	All Regional and statewide measures
Collin	Factors 2D(71%)**H**, 3, 4 & 5	No significant effect.	County	IM2, SL, S2, VMEP, TCM, TERP, NOx	All Regional and statewide measures
Denton	Factors 2D(74%)**H**, 3, 4 & 5	No significant effect.	County	IM1, SL, S2, VMEP, TCM, TERP, NOx	All Regional and statewide measures
Hood	Factors 2D(19%)**M**, 2U(11%)**L**, 3, 4 & 5	No significant effect.	County	TERP	All Regional and statewide measures
Johnson	Factors 2D(13%)**M**, 2U(55%)**M**, 3, 4 & 5	No significant effect.	County	IM2, SL, TERP	All Regional and statewide measures
Parker	Factors 2D(18%)**M**,2U(20%)**L**, 3, 4 & 5	No significant effect.	County	IM2, SL, TERP	All Regional and statewide measures
Henderson	Factors 2D(2%)**L**, 2U(31%)**M**, 3, 4 & 5	No significant effect.	County	TERP	All Regional and statewide measures
Kaufman	Factors 2D(6%)**L**, 2U(61%)**H**, 3, 4 & 5	No significant effect.	County	IM2, SL, TERP	All Regional and statewide measures
Hunt	Factors 2D(8%)**L**, 2U(25%)**L**, 3, 4 & 5	No significant effect.	County	TERP	All Regional and statewide measures
Rockwall	Factors 2D(7%)**L**, 2U(53%)**M**, 3, 4 & 5	No significant effect	County	IM2, SL, TERP	All Regional and statewide measures

8-hour Ozone Designation EPA's Exclusion Criteria Table

San Antonio MSA

County	Nox-TPD (%) (E1)	VOC-TPD (%) (E1)	Population (%)(E2)	8hr DV (E3)	Source Location (%) (E4)	2000 VMT/% (E5)	2007 VMT /% Change (E5)	2007 VMT % Total (E5)
Bexar	235 (83.6)	199 (82.9)	1,392,931(87.5)	89	43(75.4)	35,951,128/84.7	43,595,087/21.2	84.2
Comal	24 (8.5)	14 (5.8)	78,021(4.9)	Incomplete data	07(12.3)	3,008,684/7.1	3,831,663/27.3	7.4
Guadalupe	18 (6.4)	22 (9.2)	89,023(5.6)	Incomplete data	07(12.3)	2,733,878/6.4	3,433,412/25.6	6.6
Wilson	4 (1.4)	5 (2.1)	32,408(2.0)	No Monitor	-0-(0)	759,319/1.8	947,508/24.8	1.8
MSA Totals	**281 (100)**	**240 (100)**	**1,592,383(100)**		**57(100)**	**42,453,009**	**51,807,670/22.0**	**100**

8-hour Ozone Designation EPA's Exclusion Criteria Table

San Antonio MSA - Continued

County	2000 Working Population (%) (E5)	2000 Commuting Workers (E5)	% Commute (E5)	Population Growth-2005/%+ (%) (E6)	Emissions Growth-NOx-TPD 2007/% Change (%) (E6)	Emissions Growth-VOC-TPD 2007/% Change (%) (E6)
Bexar	674,277(85.7)	92,481	11.7	1,487,221/6.8(86.9)	163 /-29.8 (80.7)	149 /-25.1 (81.0)
Comal	48,276(6.1)	28,845	3.7	88,543/13.5(5.2)	21 /-12.5 (10.4)	12 /-14.3 (6.5)
Guadalupe	49,549(6.3)	32,203	4.1	98,811/11.0(5.8)	15 /-16.7(7.4)	18 /-18.2 (9.8)
Wilson	15,057(1.9)	10,521	1.3	36,677/13.2(2.1)	3 /-25.0(1.5)	5 /0.0 (2.7)
MSA Totals	**787,159(100)**	**164,050**	**20.8**	**1,711,252/7.5(100)**	**202 /-28.1(100)**	**184 /-23.3 (100)**

8-hour Ozone Designation EPA's Exclusion Criteria Table

San Antonio MSA - Continued

County	Meteor-ology (E7)	Geo-graphy (E8)	Boun-daries (E9)	Emission Controls (E10)	Regional Reductions (E11)	Other
Bexar	Factors 3, 4 & 5	Proximity to the Edwards Uplift to the west causes occasional flow reversals.	County		EASTNOx, CK27, TERP	EAC
Comal	Factors 2D(11%)**M**, 2U(36%)**M**,3, 4 & 5	Proximity to the Edwards Uplift to the west causes occasional flow reversals.	County		EASTNox, CK27, TERP	EAC
Guadalupe	Factors 2D(4%)**L**, 2U(60%)**H**, 3, 4 & 5	Proximity to the Edwards Uplift to the west causes occasional flow reversals.	County		TERP	EAC
Wilson	Factors 2D(2%)**L**, 2U(83%)**H**, 3, 4 & 5	No significant effect.	County		TERP	EAC
MSA Totals						

Dallas/Fort Worth Area

1999 VOC tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Collin	0.98	11.71	9.65	21.80	44.14
Dallas	11.70	63.99	54.84	138.70	269.23
Denton	2.12	12.71	7.44	20.70	42.97
Ellis	9.54	12.76	1.64	8.20	32.14
Henderson	0.71	12.97	1.65	3.80	19.13
Hood	0.38	5.97	0.45	1.90	8.70
Hunt	0.09	18.54	1.11	5.40	25.14
Johnson	0.42	12.83	1.36	5.90	20.51
Kaufman	3.08	16.57	0.74	7.20	27.59
Parker	0.76	13.42	0.67	5.80	20.65
Rockwall	0.00	9.17	0.77	2.70	12.64
Tarrant	11.23	48.02	29.64	88.50	177.39
TOTAL	41.01	238.66	109.96	310.60	700.23

1999 NOX tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Collin	5.24	1.54	21.05	33.80	61.63
Dallas	49.40	13.25	71.96	214.90	349.51
Denton	2.93	1.24	17.75	32.00	53.92
Ellis	29.80	0.24	8.74	12.70	51.48
Henderson	7.94	0.12	0.97	5.80	14.83
Hood	24.51	0.05	0.67	2.90	28.13
Hunt	0.39	0.21	1.98	8.30	10.88
Johnson	6.02	0.21	2.21	9.20	17.64
Kaufman	0.86	0.14	1.75	11.20	13.95
Parker	2.77	0.14	1.79	9.00	13.70
Rockwall	0.00	0.08	1.29	4.20	5.57
Tarrant	29.72	6.72	51.82	137.00	225.26
TOTAL	159.58	23.94	181.98	481.00	846.50

2010 VOC tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Collin	1.60	5.77	6.54	13.90	27.81
Dallas	11.80	37.82	32.41	73.10	155.13
Denton	1.80	10.82	6.43	12.50	31.55
Ellis	6.80	7.92	1.64	4.60	20.96
Henderson	0.70	6.20	2.94	1.90	11.74
Hood	0.50	2.12	0.68	1.00	4.30
Hunt	0.10	8.28	1.72	2.50	12.60
Johnson	0.70	6.25	1.33	3.40	11.68
Kaufman	2.40	9.46	1.14	4.10	17.10
Parker	0.10	6.49	1.11	1.60	9.30
Rockwall	0.00	1.51	1.00	1.60	4.11
Tarrant	9.60	35.22	19.80	49.20	113.82
TOTAL	36.10	137.86	76.74	169.40	420.10

2010 NOX tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Collin	3.90	1.85	15.91	22.80	44.46
Dallas	11.60	13.77	49.35	120.00	194.72
Denton	1.30	2.91	6.66	20.50	31.37
Ellis	40.10	0.28	10.47	7.60	58.45
Henderson	8.10	1.83	1.05	3.10	14.08
Hood	15.40	1.81	0.54	1.70	19.45
Hunt	0.50	0.25	2.44	4.10	7.29
Johnson	4.80	0.28	8.39	5.60	19.07
Kaufman	10.50	0.19	4.61	6.70	22.00
Parker	4.60	6.72	0.89	5.40	17.61
Rockwall	0.00	0.13	0.91	2.60	3.64
Tarrant	8.90	6.99	46.02	80.80	142.71
TOTAL	109.70	37.01	147.24	280.90	574.85

Ellis County 8-Hour Ozone Design Value
(and Annual Fourth Highest 8-Hour Ozone Average) 1997-2003

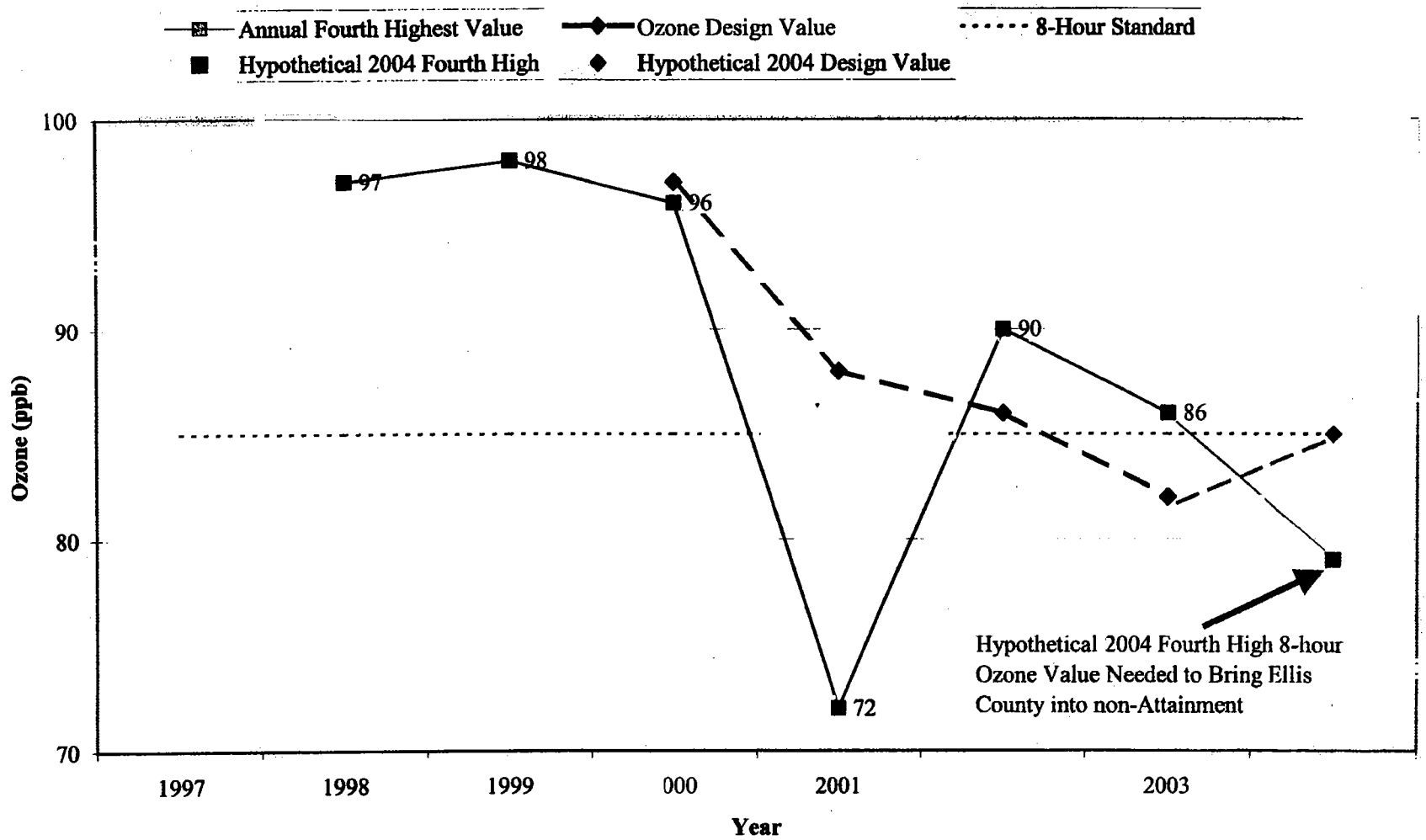


CHART 1

Upwind and Downwind Comparison

(2001-2002)

	Upwind		Downwind		Difference	
	1-hour	8-hour	1-hour	8-hour	1-hour	8-hour
Average	70	64	102	89	30	23
Southeast	72	66	**103**	**91**	30	25
East	63	57	97	86	**34**	**29**
Northeast	**75**	**67**	100	87	26	20

- The majority of 8-hr exceedance days since 2001 experienced wind coming from the northeast, east, and southeast.
- Highest upwind values were recorded during days with northeast winds.
- Downwind ozone was highest on days with southeast winds.
- However, the biggest difference between upwind and downwind ozone occurred when winds crossed both Dallas and Fort Worth from the east.

CHART 2

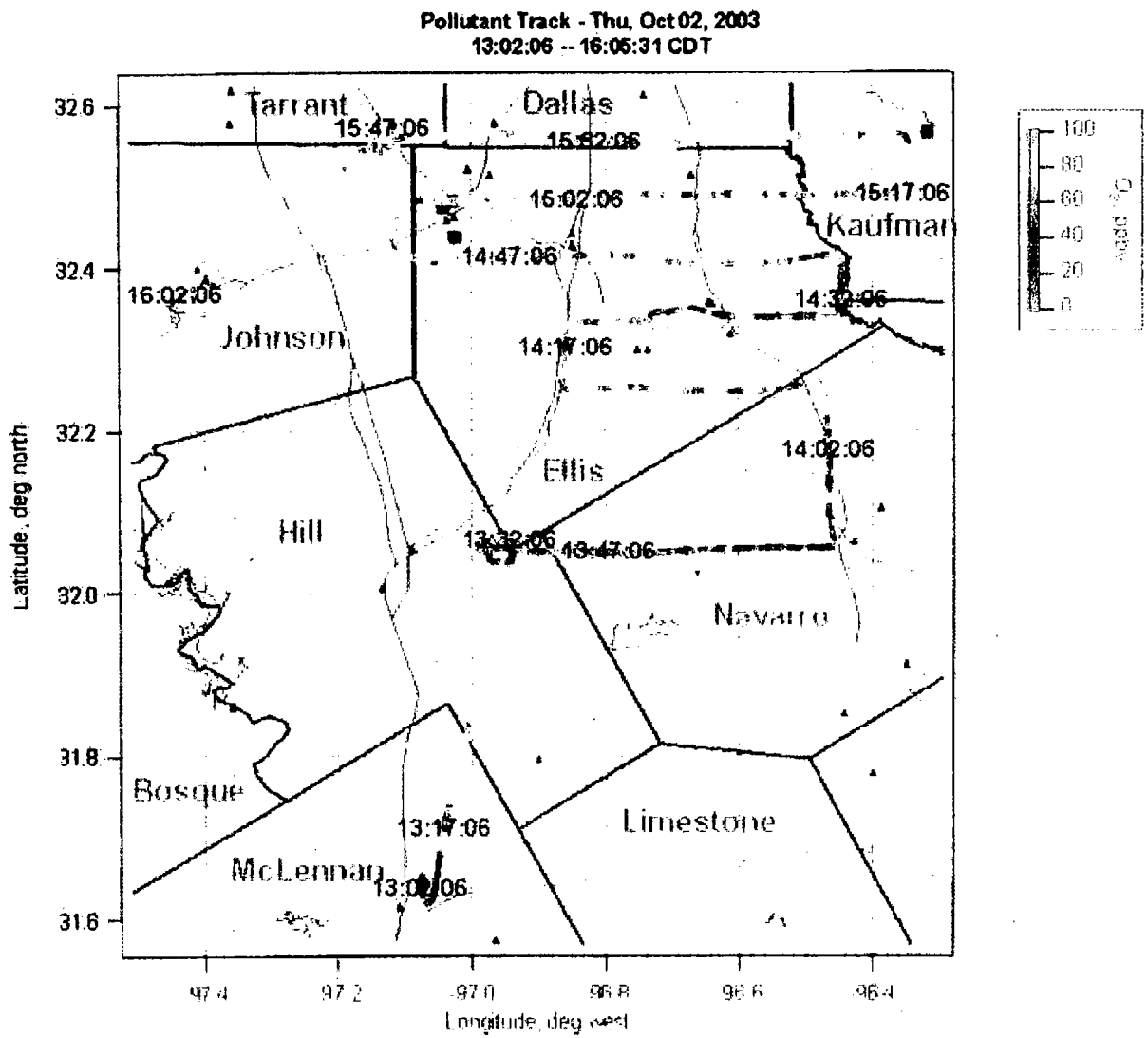

Pollutant Track - Thu, Oct 02, 2003
13:02:06 -- 16:05:31 CDT
Tarrant
Dallas
Kaufman
Johnson
Ellis
Hill
Navarro
Bosque
Limestone
McLennan
15:47:06
15:32:06
15:02:06
15:17:06
14:47:06
16:02:06
14:32:06
14:17:06
14:02:06
13:32:06
13:47:06
13:17:06
13:02:06
32.6
32.4
32.2
32.0
31.8
31.6
97.4
97.2
97.0
96.8
96.6
96.4
Latitude, deg north
Longitude, deg west
100
80
60
40
20
0

CHART 3

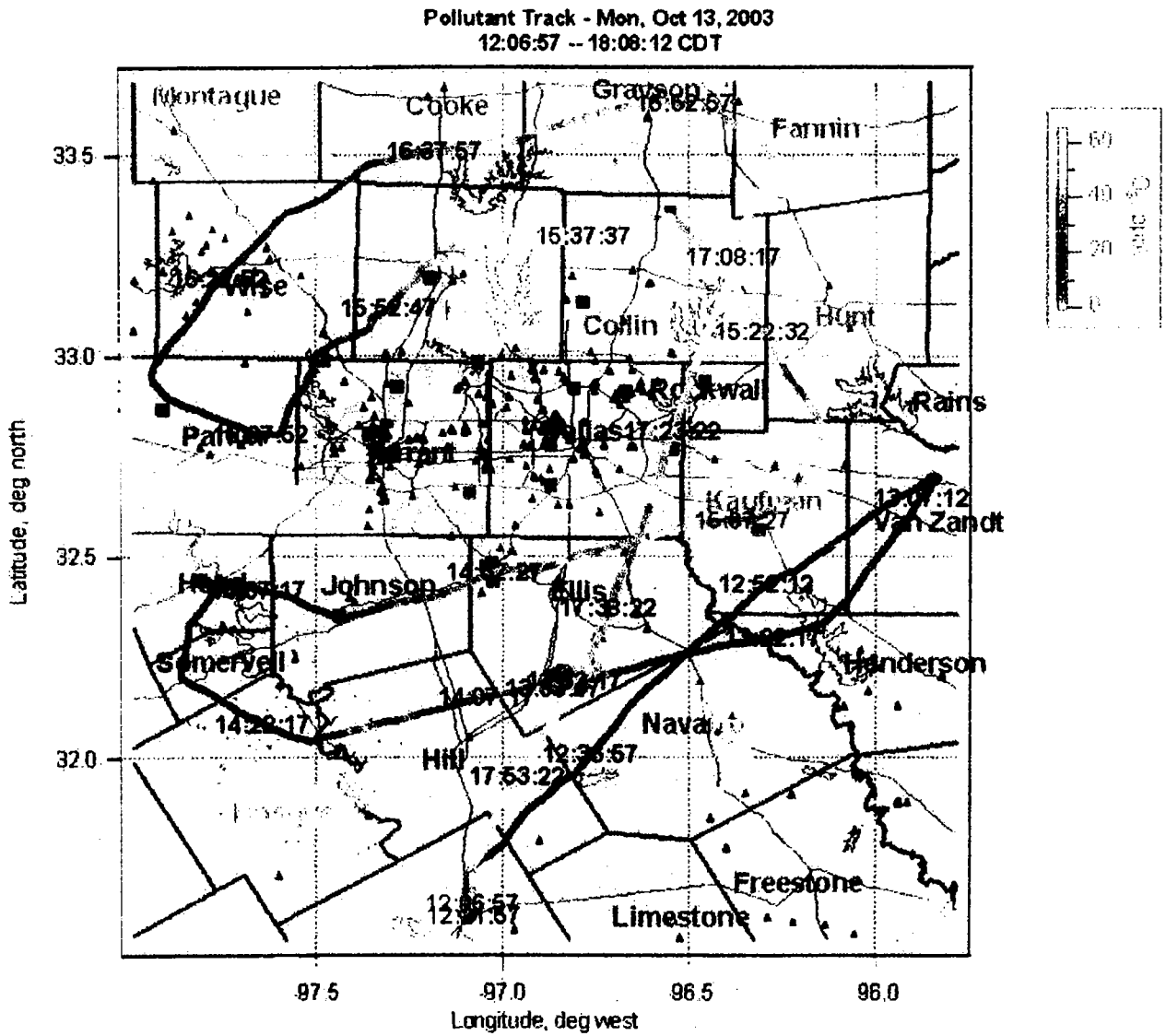

Pollutant Track - Mon, Oct 13, 2003
12:06:57 -- 18:08:12 CDT
Montague
Cooke
Grayson
Fannin
Wise
Collin
Hunt
Rains
Van Zandt
Johnson
Ellis
Henderson
Somervell
Navarro
Hill
Freestone
Limestone
15:37:37
17:08:17
15:22:32
33.5
33.0
32.5
32.0
-97.5
-97.0
-96.5
-96.0
Latitude, deg north
Longitude, deg west

CHART 4

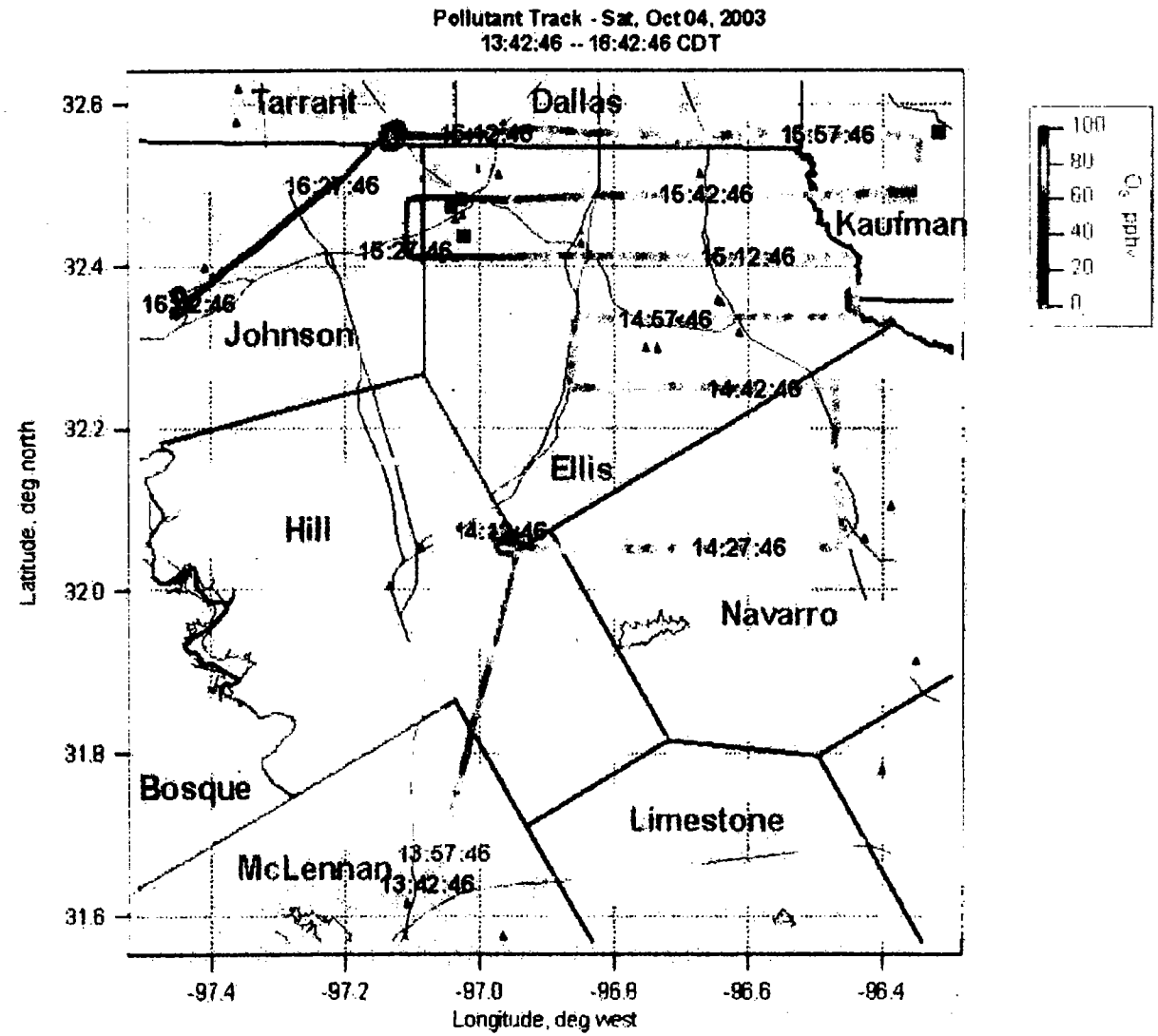

Pollutant Track - Sat, Oct 04, 2003
13:42:46 -- 16:42:46 CDT
Tarrant
Dallas
Kaufman
Johnson
Ellis
Hill
Navarro
Bosque
Limestone
McLennan
16:57:46
16:42:46
16:27:46
16:12:46
15:57:46
15:42:46
15:27:46
15:12:46
14:57:46
14:42:46
14:27:46
13:57:46
13:42:46
32.6
32.4
32.2
32.0
31.8
31.6
-97.4
-97.2
-97.0
-96.8
-96.6
-96.4
Latitude, deg north
Longitude, deg west
100
80
60
40
20
0
O3 ppbv

CHART 5

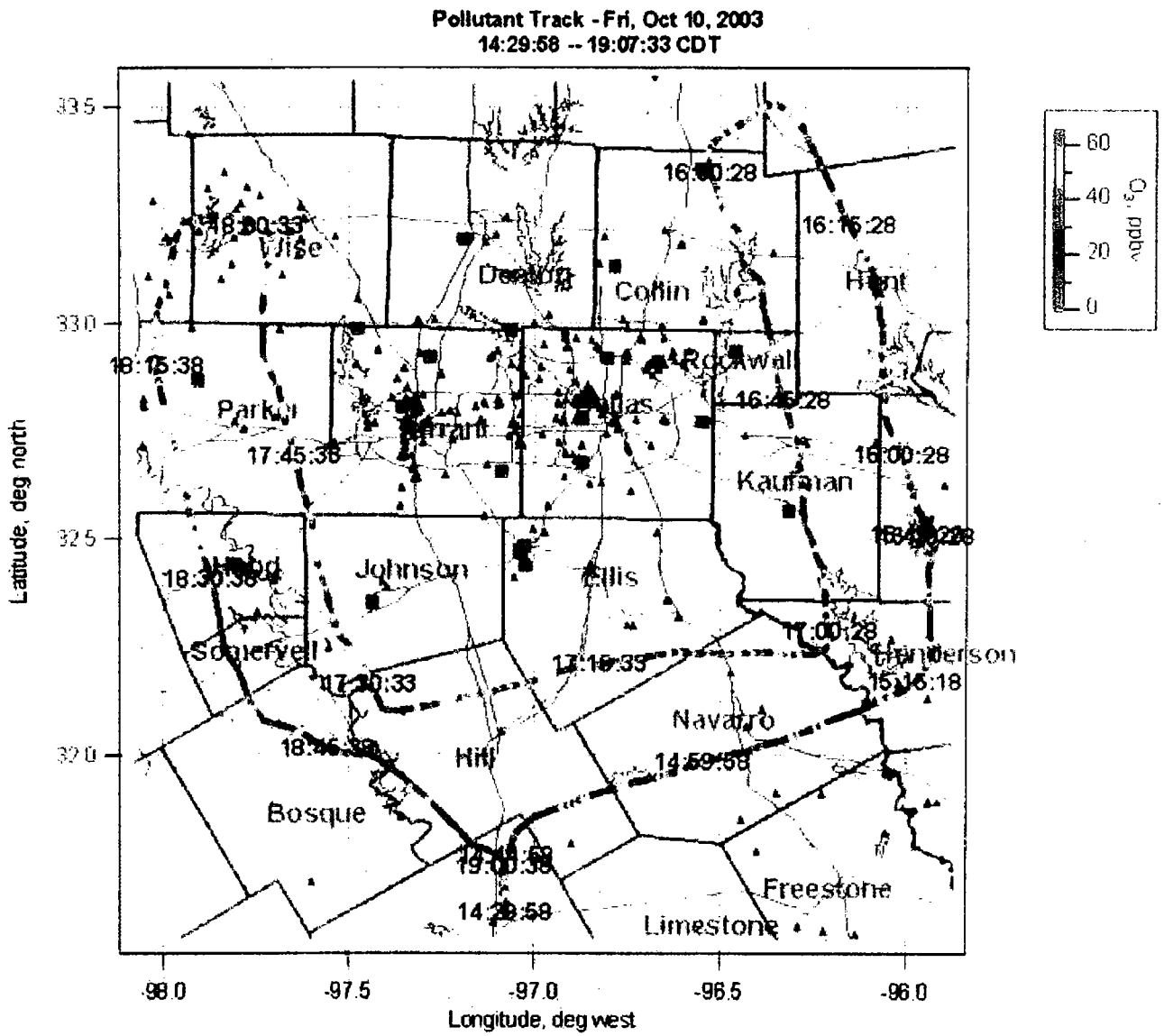
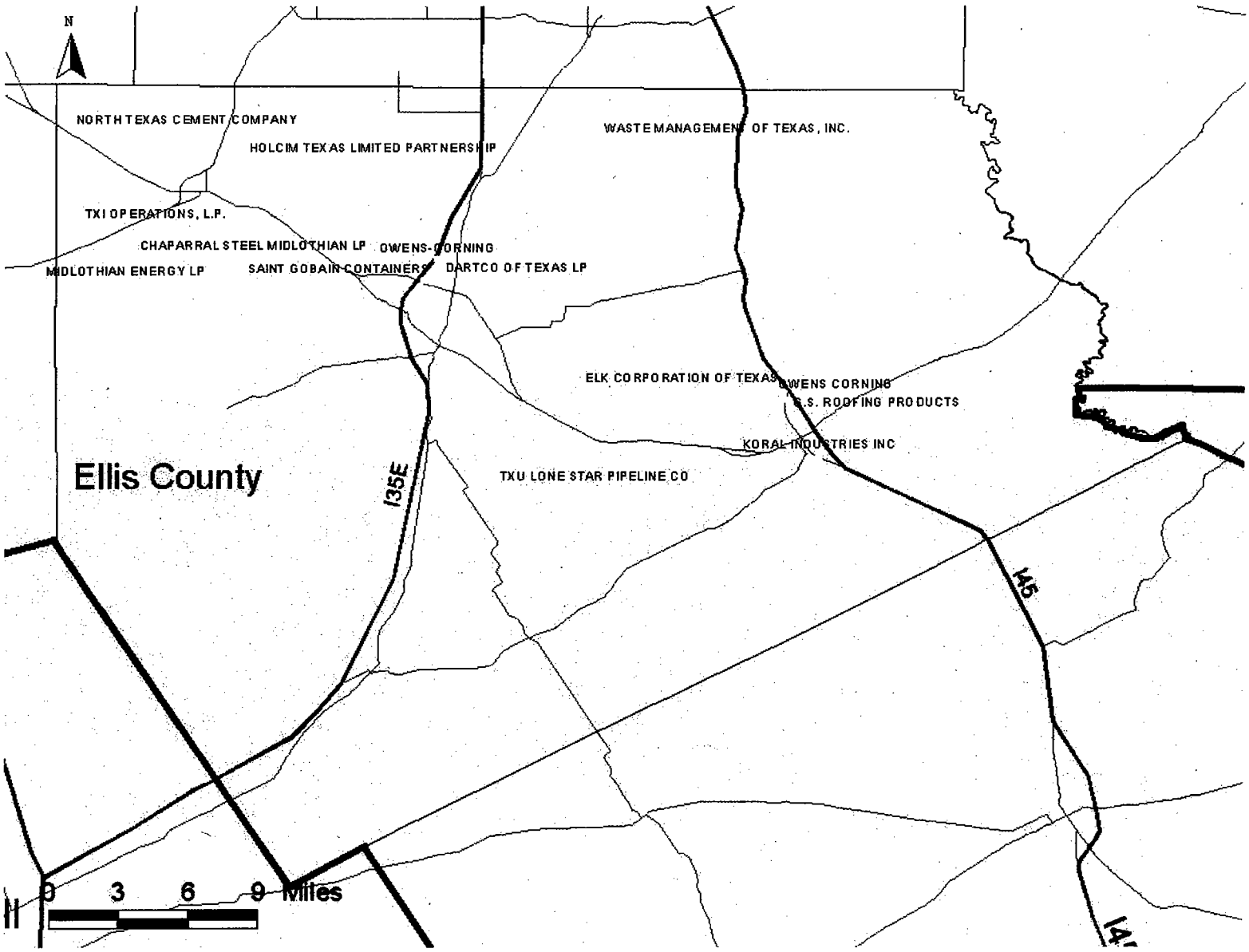
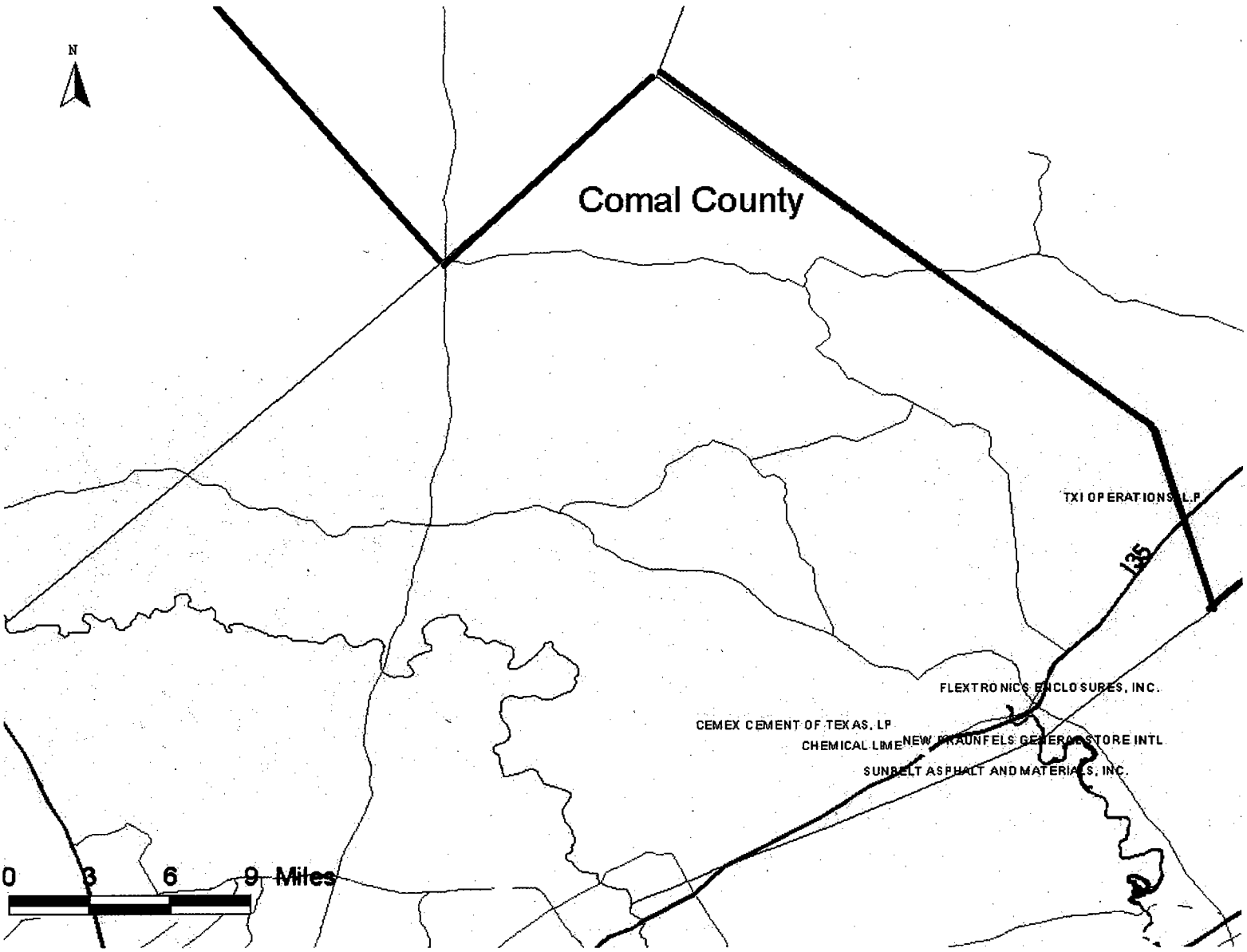
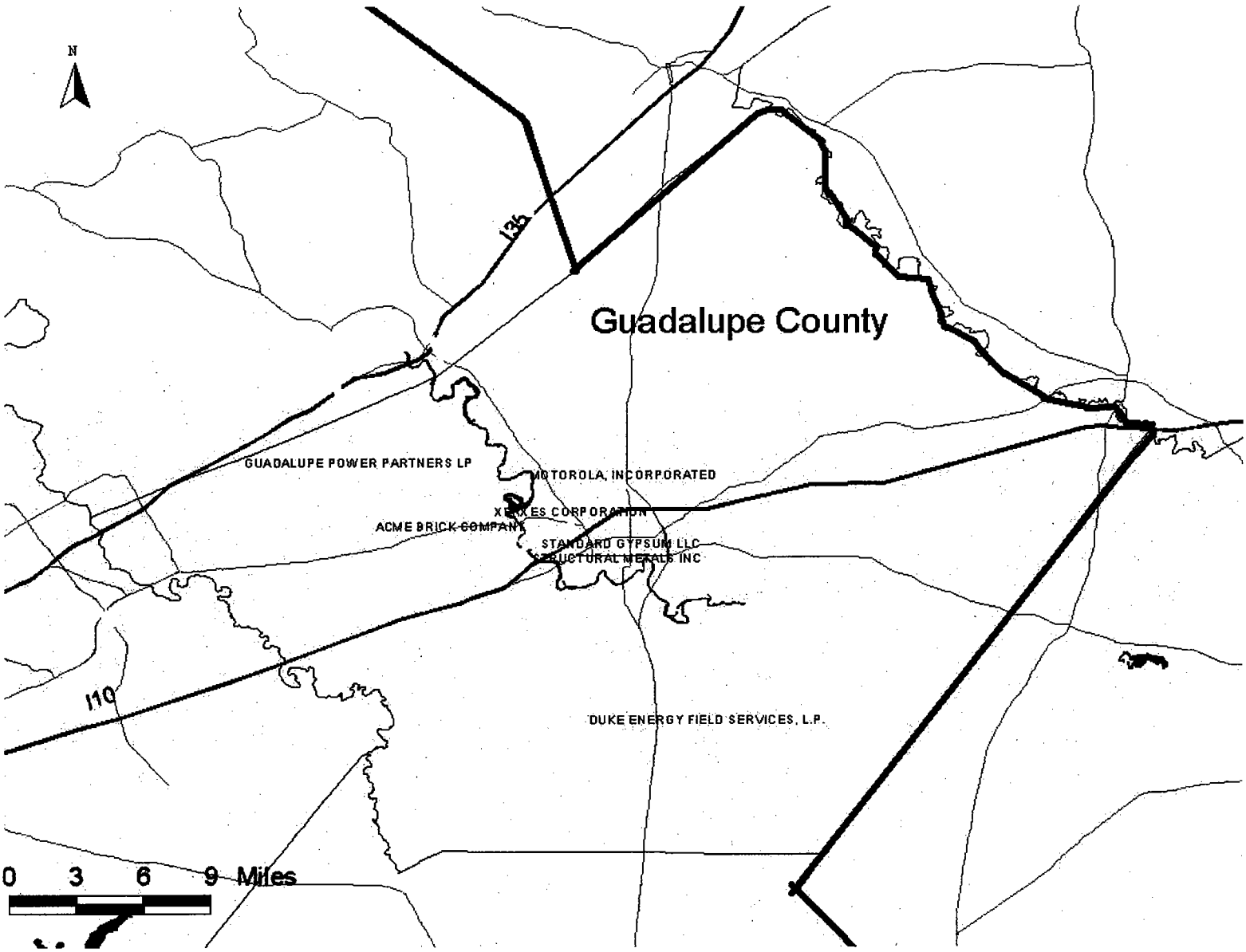
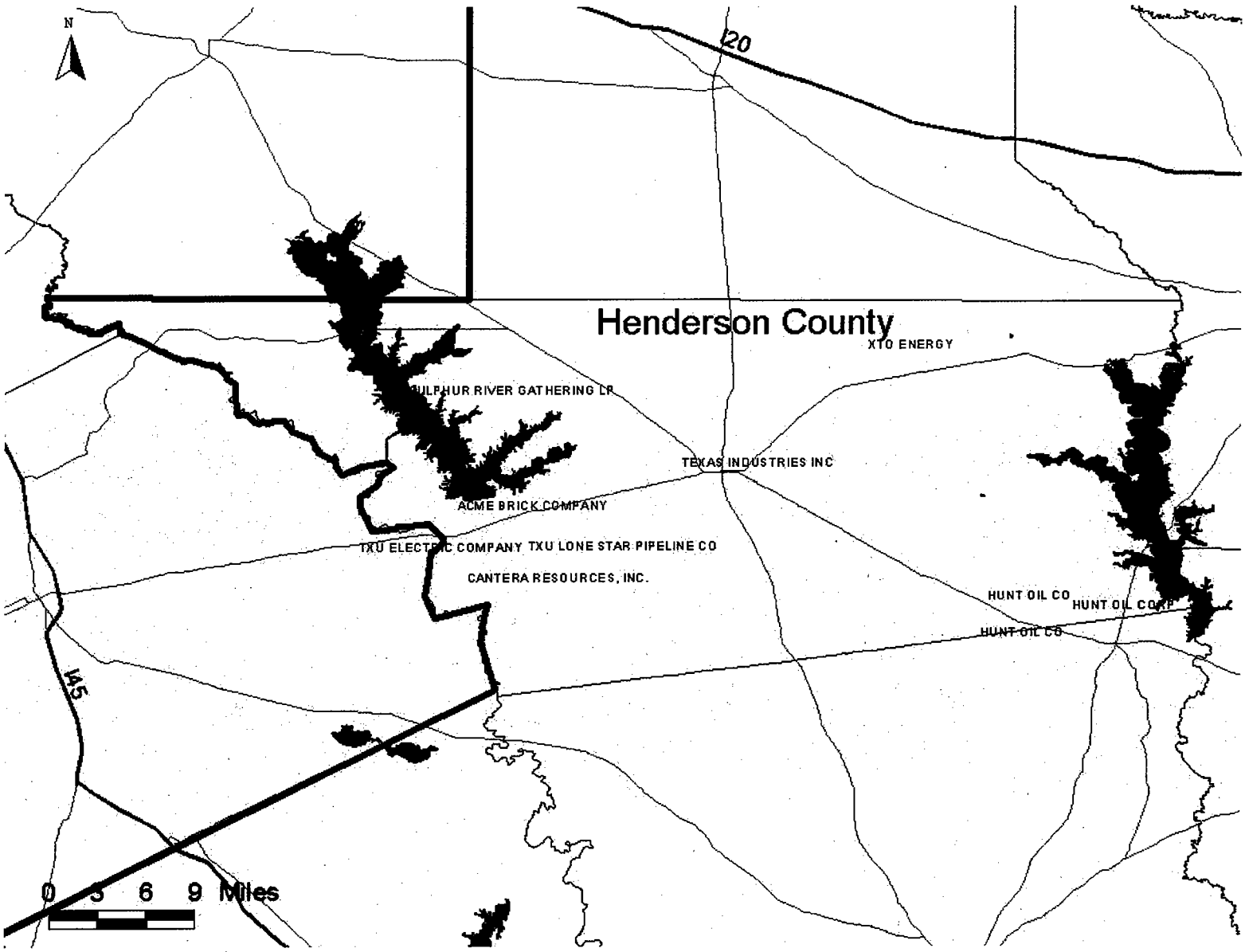

Pollutant Track - Fri, Oct 10, 2003
14:29:58 -- 19:07:33 CDT
Latitude, deg north
Longitude, deg west
33.5
33.0
32.5
32.0
-98.0
-97.5
-97.0
-96.5
-96.0
Wise
Denton
Collin
Hunt
Rockwall
Parker
Tarrant
Dallas
Kaufman
Wood
Johnson
Ellis
Somervell
Henderson
Navarro
Hill
Bosque
Freestone
Limestone
16:00:28
16:15:28
18:30:33
18:15:38
16:45:28
17:45:38
16:00:28
18:30:38
17:00:28
17:15:33
15:15:18
17:30:33
18:45:38
14:59:58
19:00:58
14:29:58
60
40
20
0
O_3, ppbv

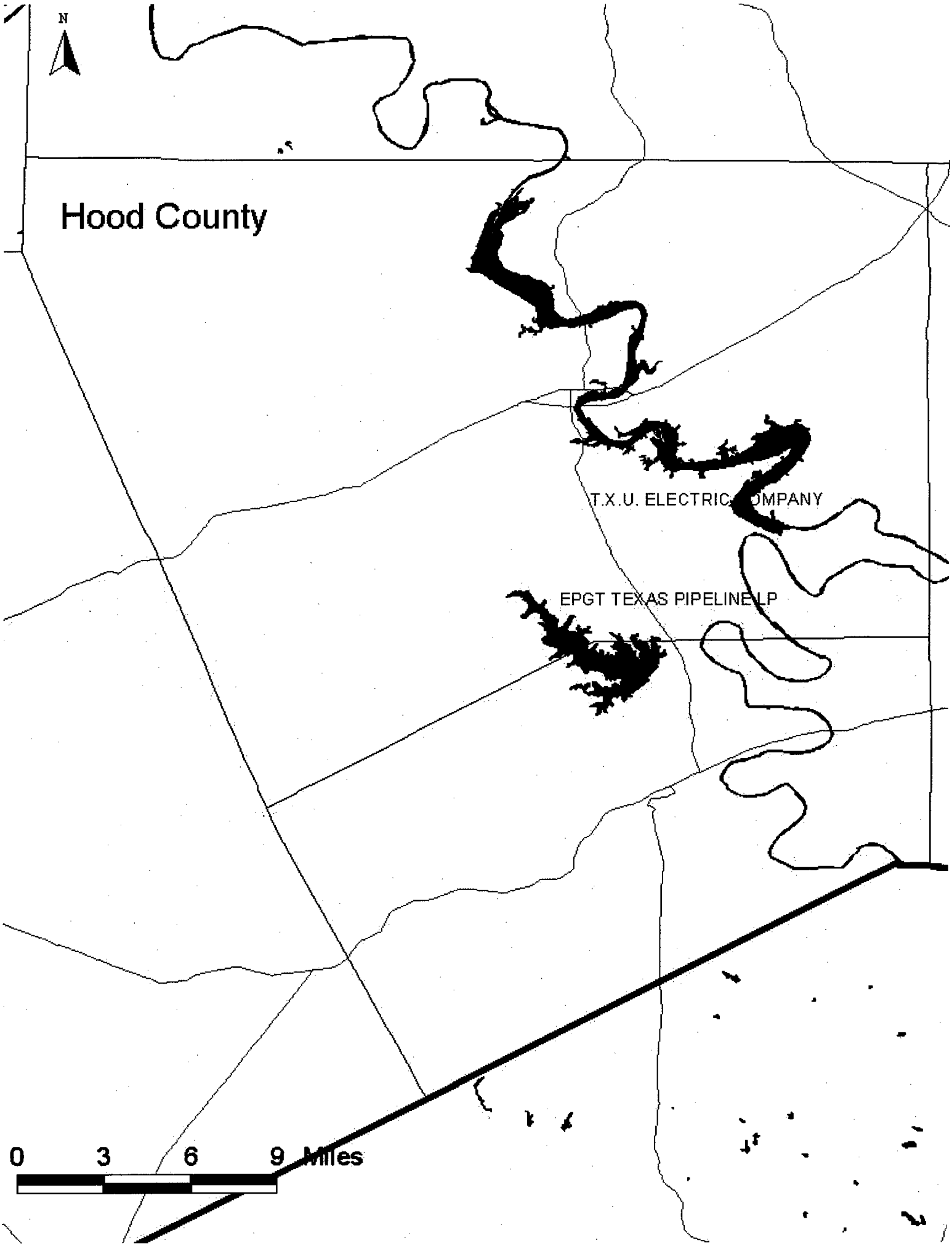
CHART 6

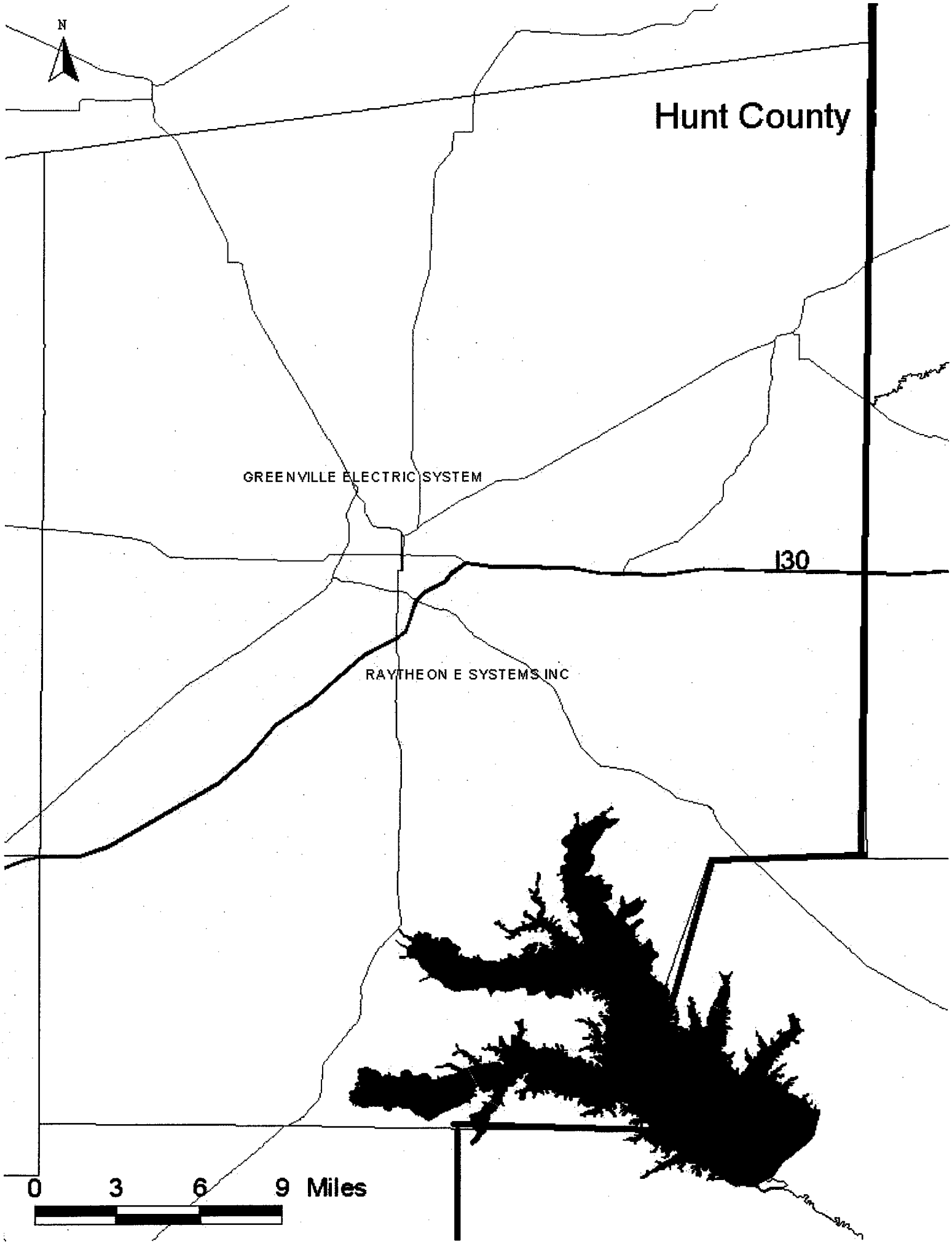

N
NORTH TEXAS CEMENT COMPANY
HOLCIM TEXAS LIMITED PARTNERSHIP
WASTE MANAGEMENT OF TEXAS, INC.
TXI OPERATIONS, L.P.
CHAPARRAL STEEL MIDLOTHIAN LP
OWENS-CORNING
MIDLOTHIAN ENERGY LP
SAINT GOBAIN CONTAINERS
DARTCO OF TEXAS LP
ELK CORPORATION OF TEXAS
OWENS CORNING
G.S. ROOFING PRODUCTS
KORAL INDUSTRIES INC
Ellis County
TXU LONE STAR PIPELINE CO
135E
145
0 3 6 9 Miles

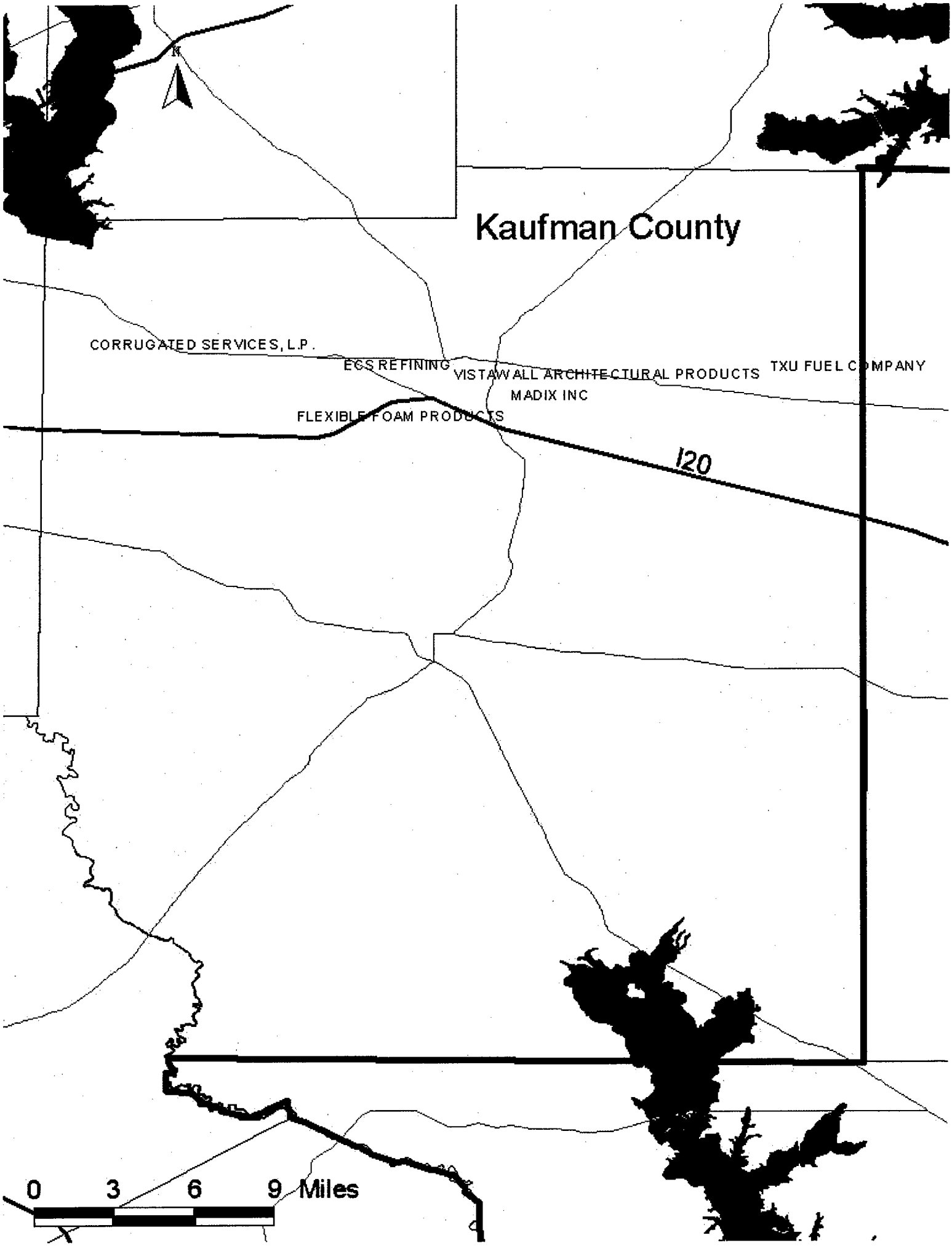

N
Comal County
TXI OPERATIONS, L.P.
I35
FLEXTRONICS ENCLOSURES, INC.
CEMEX CEMENT OF TEXAS, LP
CHEMICAL LIME
NEW BRAUNFELS GENERAL STORE INTL
SUNBELT ASPHALT AND MATERIALS, INC.
0 3 6 9 Miles

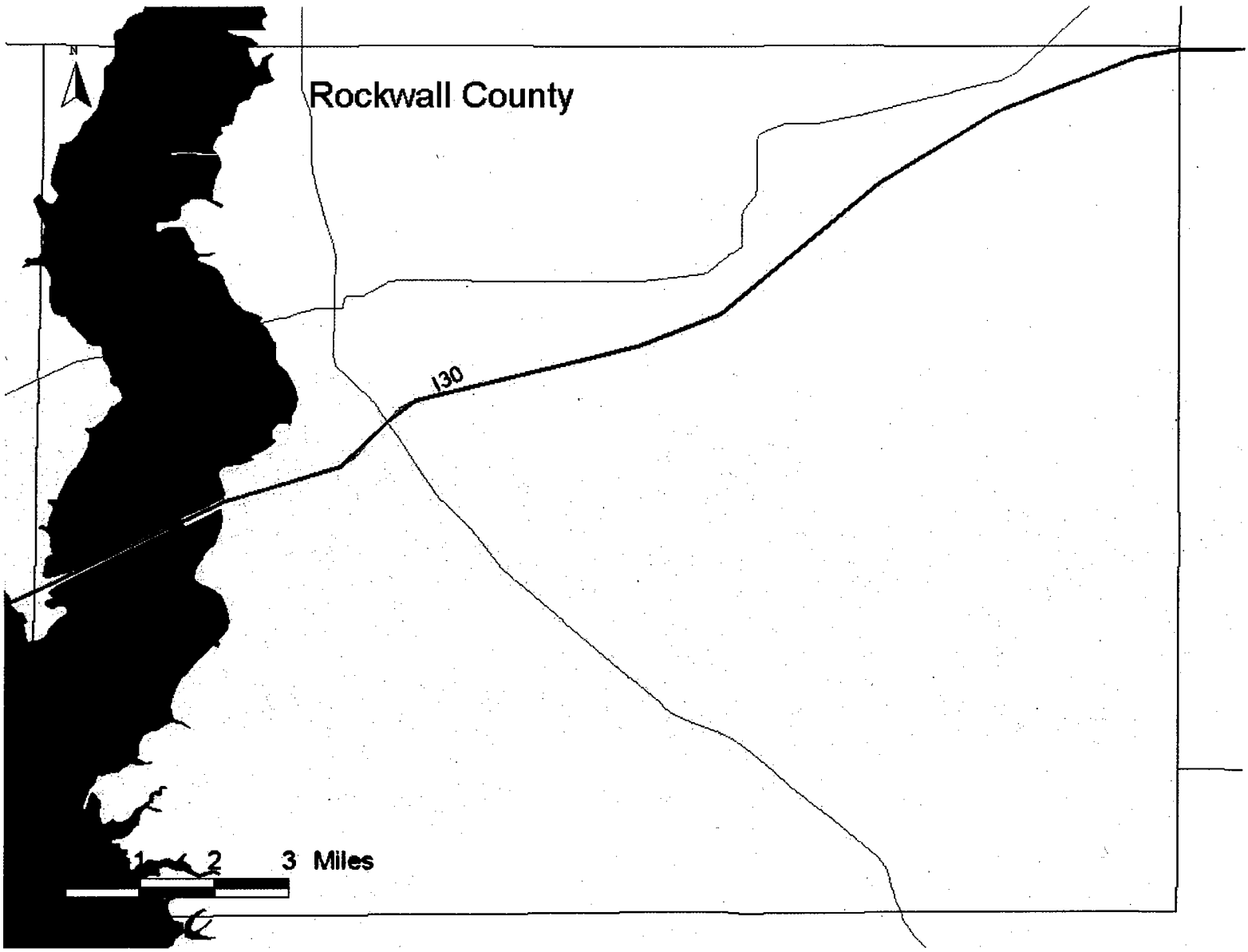

N
135
Guadalupe County
GUADALUPE POWER PARTNERS LP
MOTOROLA, INCORPORATED
XEROX CORPORATION
ACME BRICK COMPANY
STANDARD GYPSUM LLC
STRUCTURAL METALS INC
110
DUKE ENERGY FIELD SERVICES, L.P.
0 3 6 9 Miles

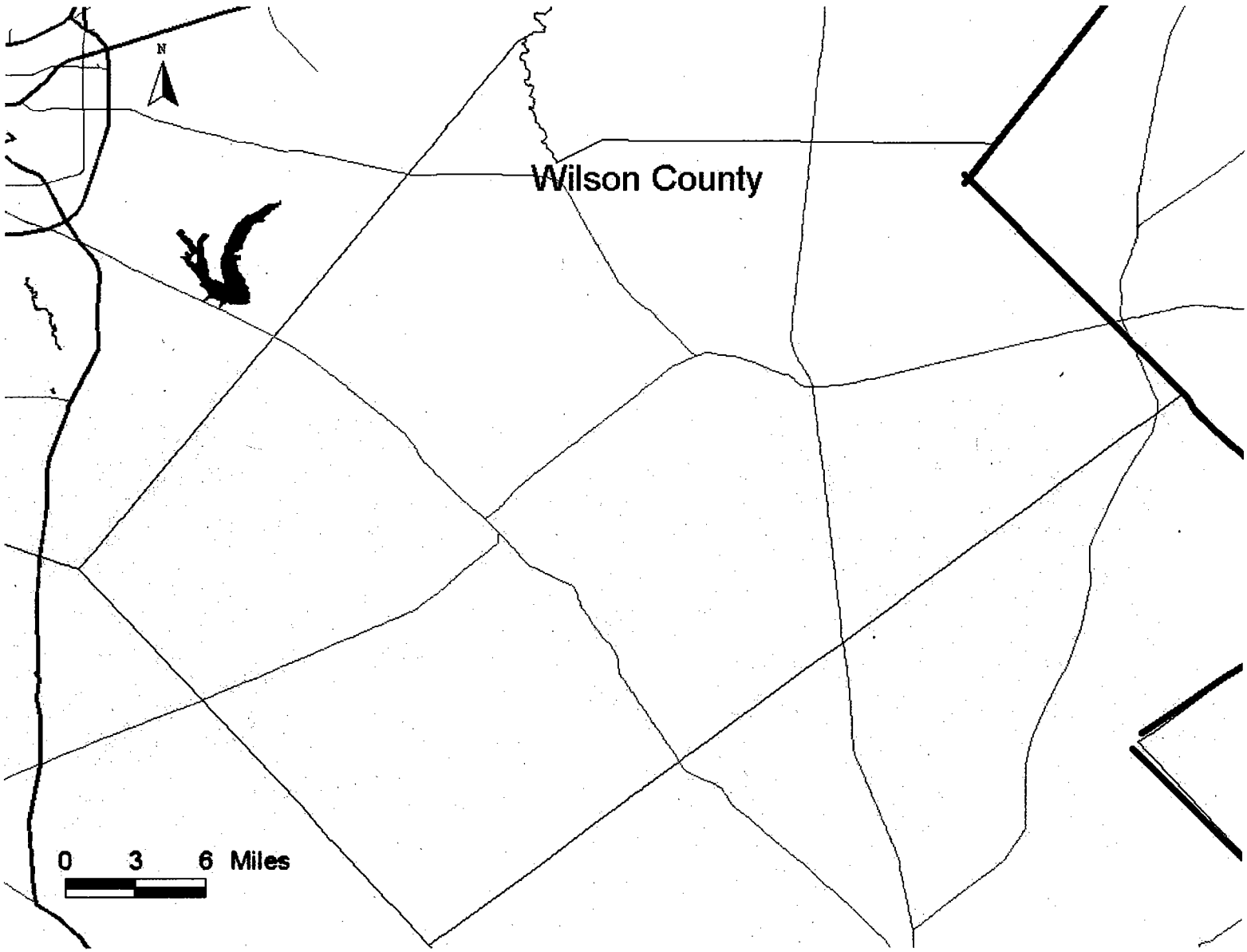

N
120
Henderson County
XTO ENERGY
SULPHUR RIVER GATHERING LP
TEXAS INDUSTRIES INC
ACME BRICK COMPANY
TXU ELECTRIC COMPANY TXU LONE STAR PIPELINE CO
CANTERA RESOURCES, INC.
HUNT OIL CO
HUNT OIL CORP
HUNT OIL CO
145
0 3 6 9 Miles

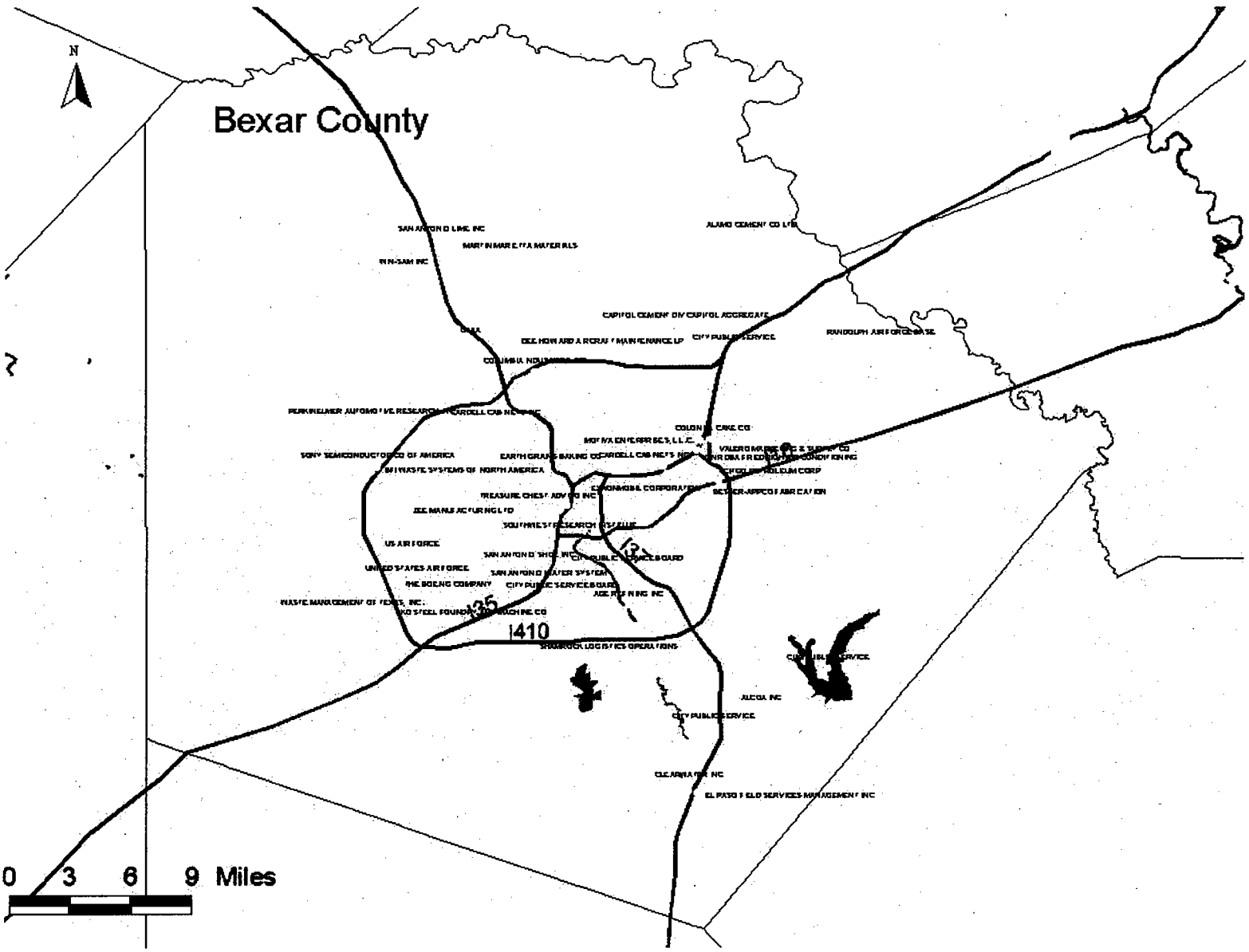

N
Hood County
T.X.U. ELECTRIC COMPANY
EPGT TEXAS PIPELINE LP
0
3
6
9 Miles


N
Hunt County
GREENVILLE ELECTRIC SYSTEM
I30
RAYTHEON E SYSTEMS INC
0 3 6 9 Miles


Kaufman County
CORRUGATED SERVICES, L.P.
ECS REFINING
VISTAWALL ARCHITECTURAL PRODUCTS
TXU FUEL COMPANY
MADIX INC
FLEXIBLE FOAM PRODUCTS
120
0 3 6 9 Miles

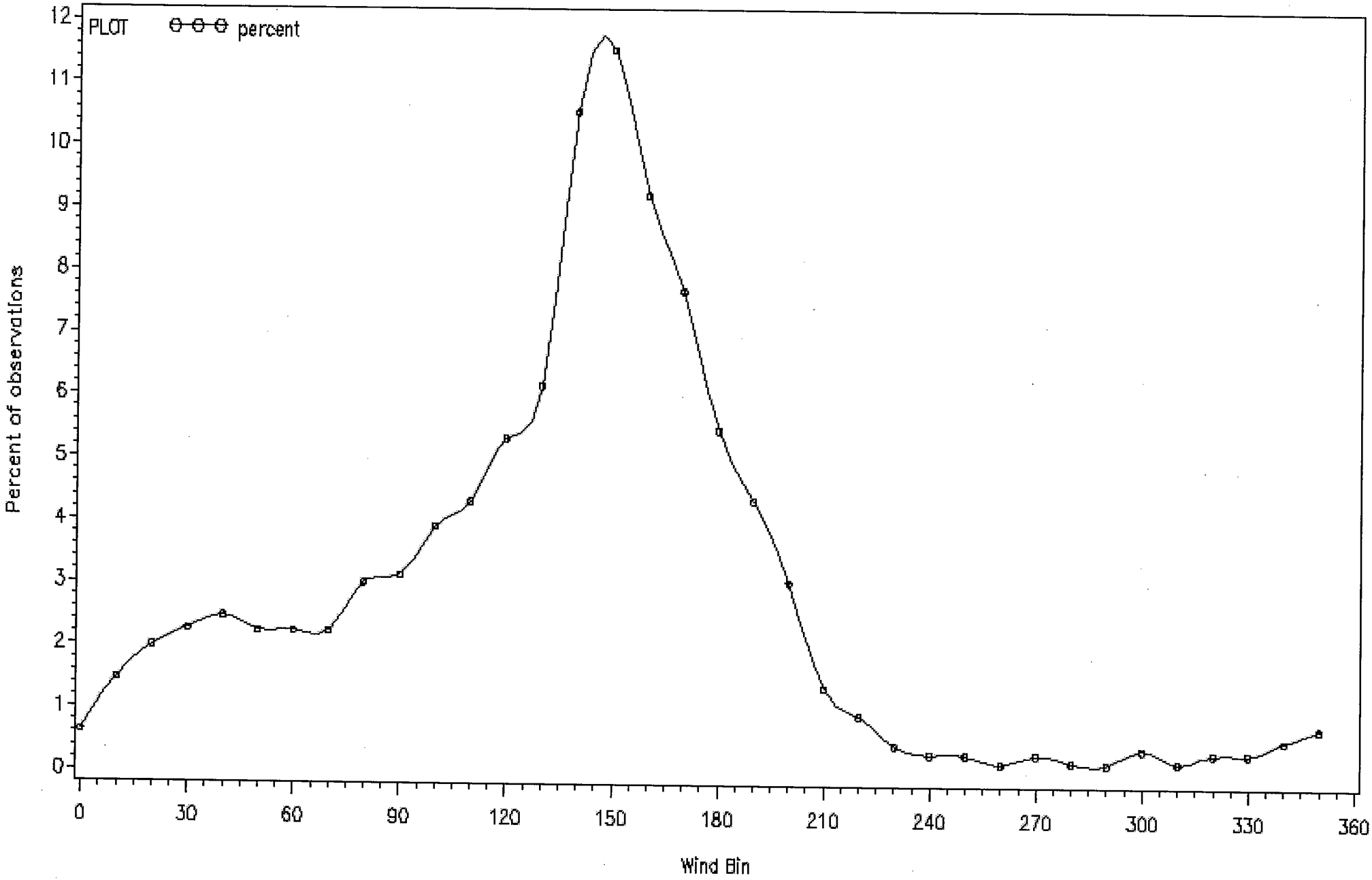

N
Rockwall County
130
1
2
3 Miles


N
Wilson County
0 3 6 Miles


N
Bexar County
SAN ANTONIO LIME INC
MARTIN MARIETTA MATERIALS
WIN-SAM INC
ALAMO CEMENT CO LTD
CAPITOL CEMENT DIV CAPITOL AGGREGATE
DEE HOWARD AIRCRAFT MAINTENANCE LP
CITY PUBLIC SERVICE
RANDOLPH AIR FORCE BASE
COLUMBIA INDUSTRIES
PERKINELMER AUTOMOTIVE RESEARCH
CARDELL CABINETS INC
COLONIAL CAKE CO
MOTIVA ENTERPRISES, L.L.C.
SONY SEMICONDUCTOR CO OF AMERICA
EARTH GRAINS BAKING CO
CARDELL CABINETS INC
VALERO MARKETING & SUPPLY CO
BFI WASTE SYSTEMS OF NORTH AMERICA
CITGO PETROLEUM CORP
TREASURE CHEST ADVISORS INC
EXXONMOBIL CORPORATION
BESTER-APPCO FABRICATION
ZEE MANUFACTURING LTD
SOUTHWEST RESEARCH INSTITUTE
US AIR FORCE
SAN ANTONIO SHOE INC
CITY PUBLIC SERVICE BOARD
UNITED STATES AIR FORCE
SAN ANTONIO WATER SYSTEM
THE BOEING COMPANY
CITY PUBLIC SERVICE BOARD
AGE REFINING INC
WASTE MANAGEMENT OF TEXAS, INC.
KO STEEL FOUNDRY
MACHINE CO
I410
SHAMROCK LOGISTICS OPERATIONS
CITY PUBLIC SERVICE
ALCOA INC
CITY PUBLIC SERVICE
CLEARWATER INC
EL PASO FIELD SERVICES MANAGEMENT INC
0 3 6 9 Miles

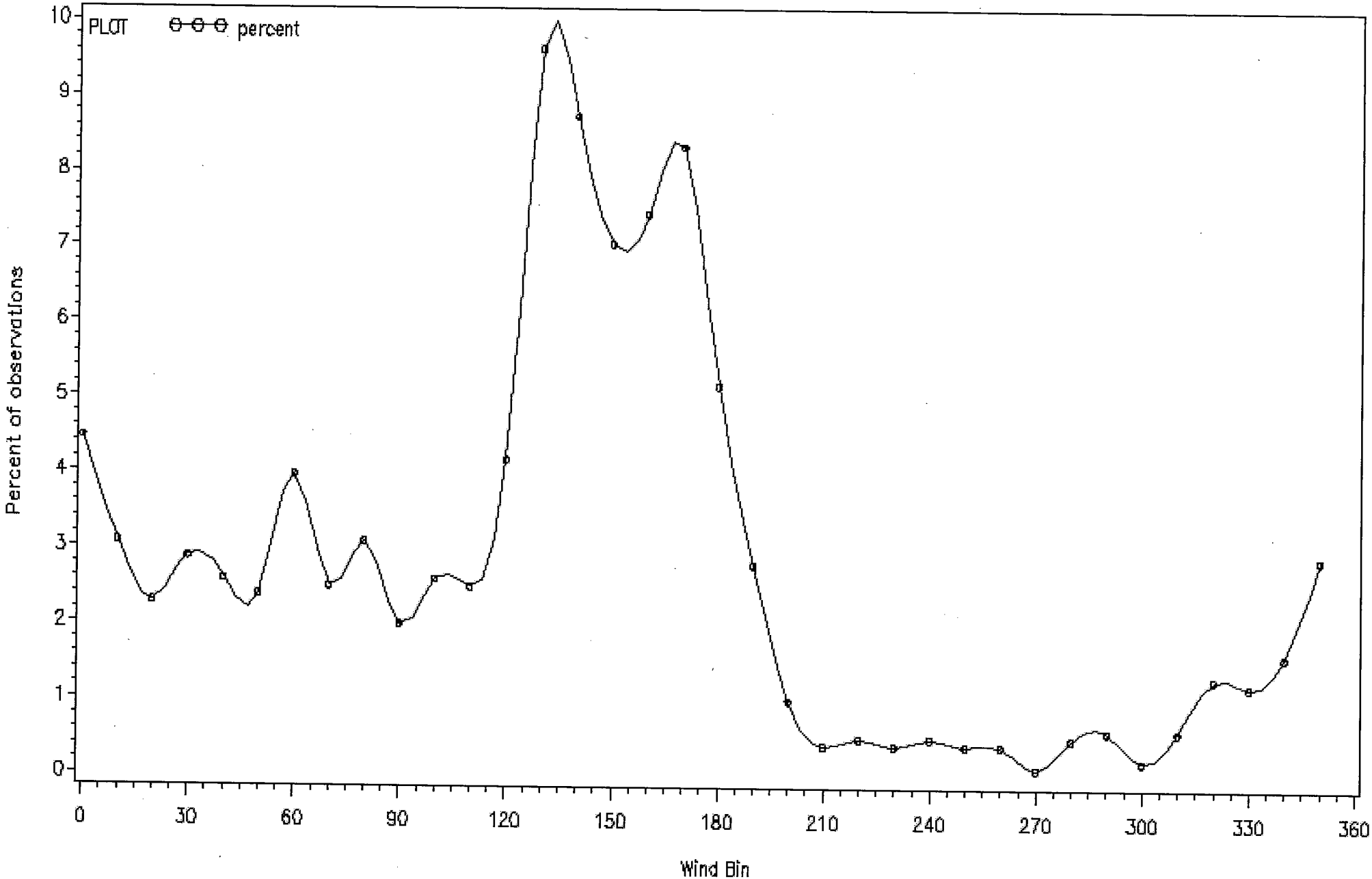
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=212 CNTYNAME=CALDWELL



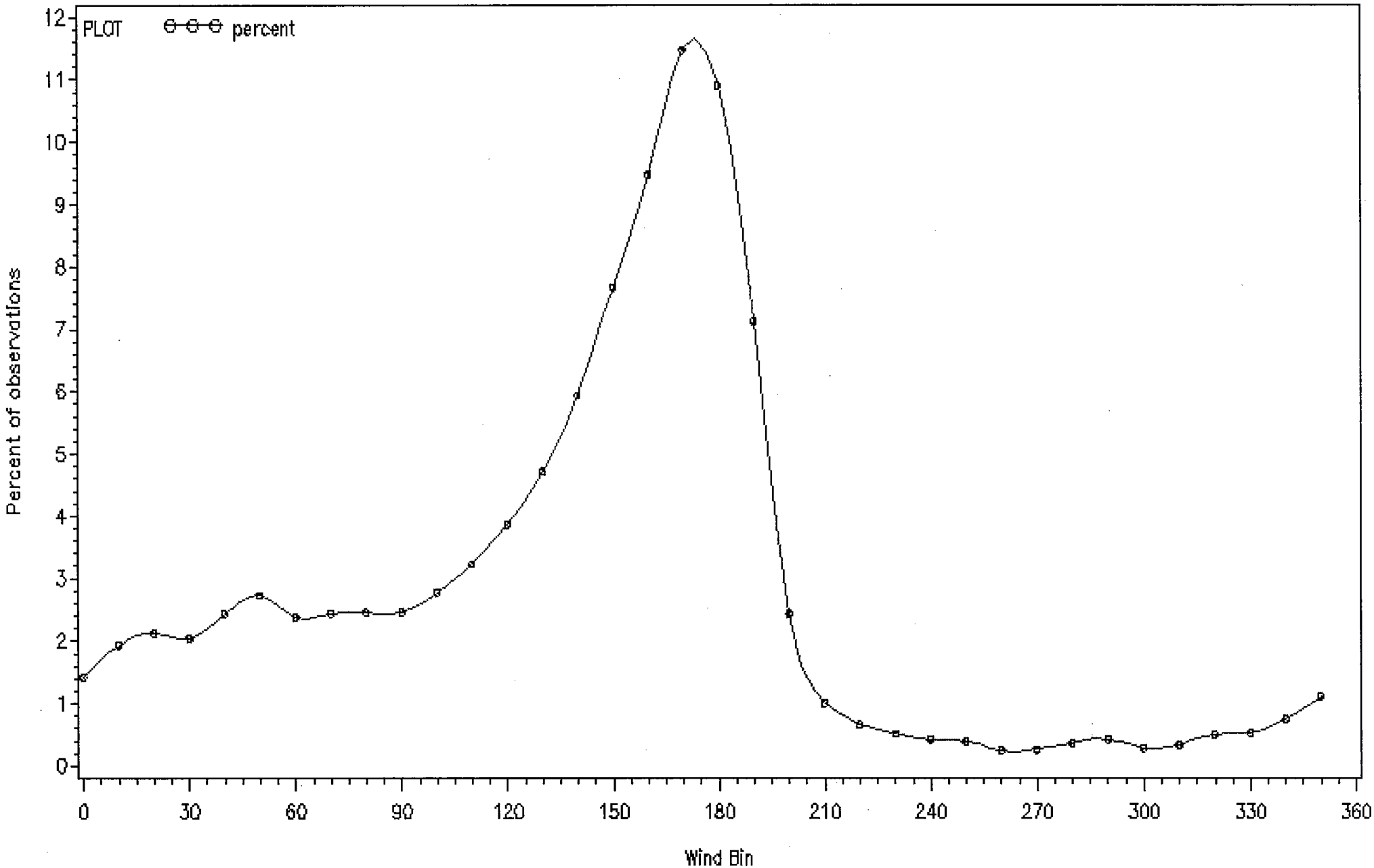
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=212 CNTYNAME=HAYS



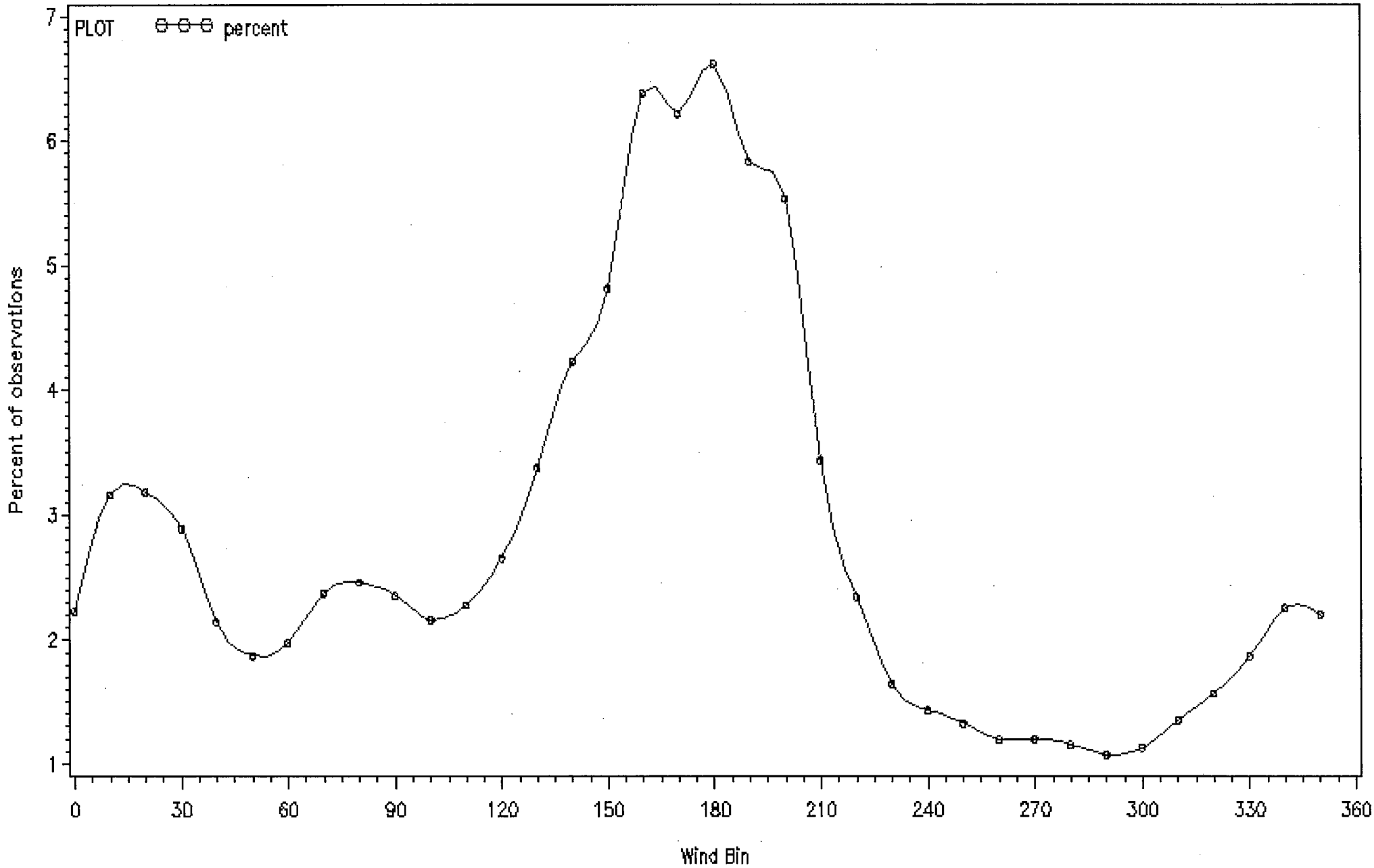
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=212 CNTYNAME=TRAVIS



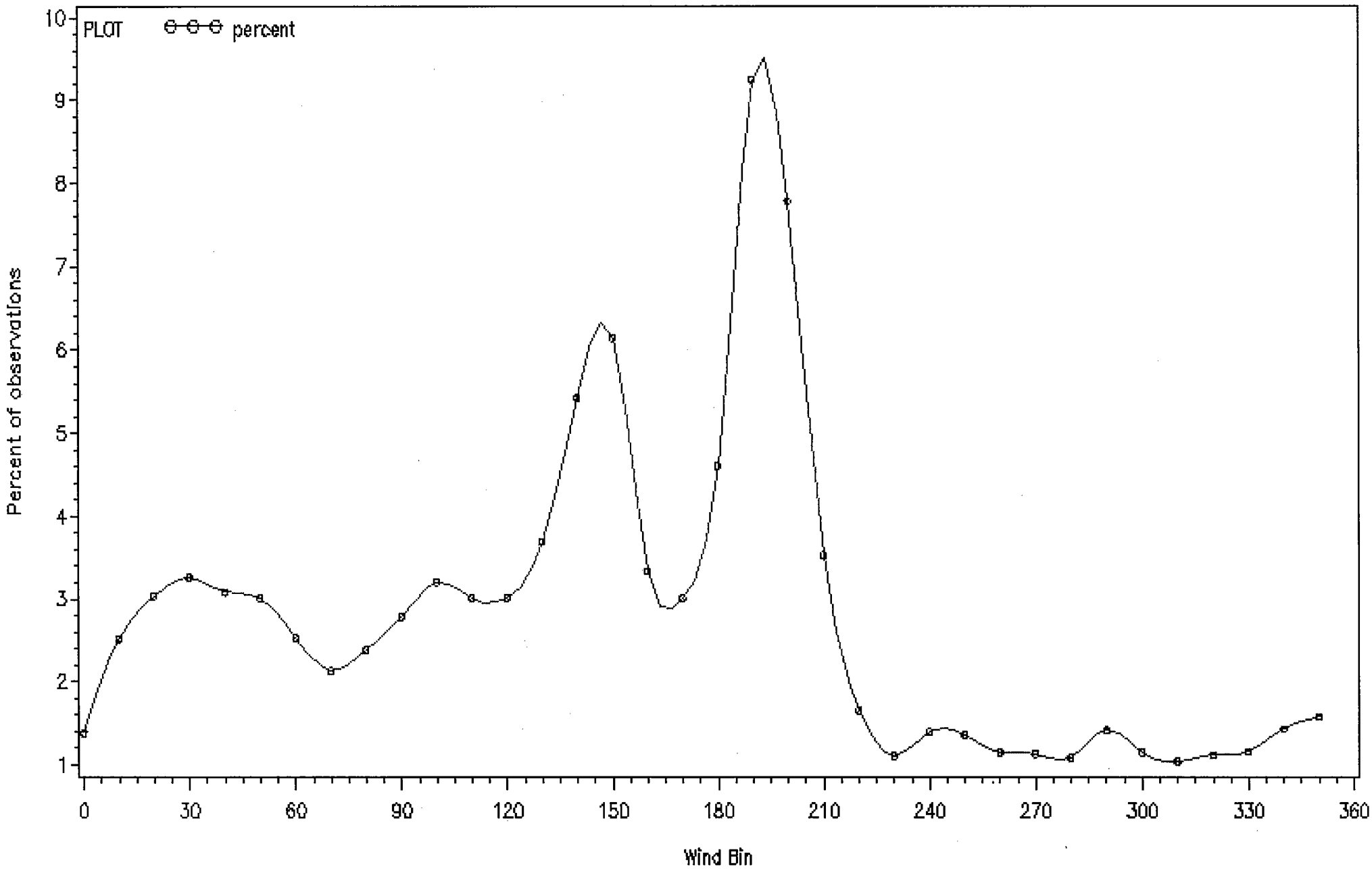
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=106 CNTYNAME=JEFFERSON



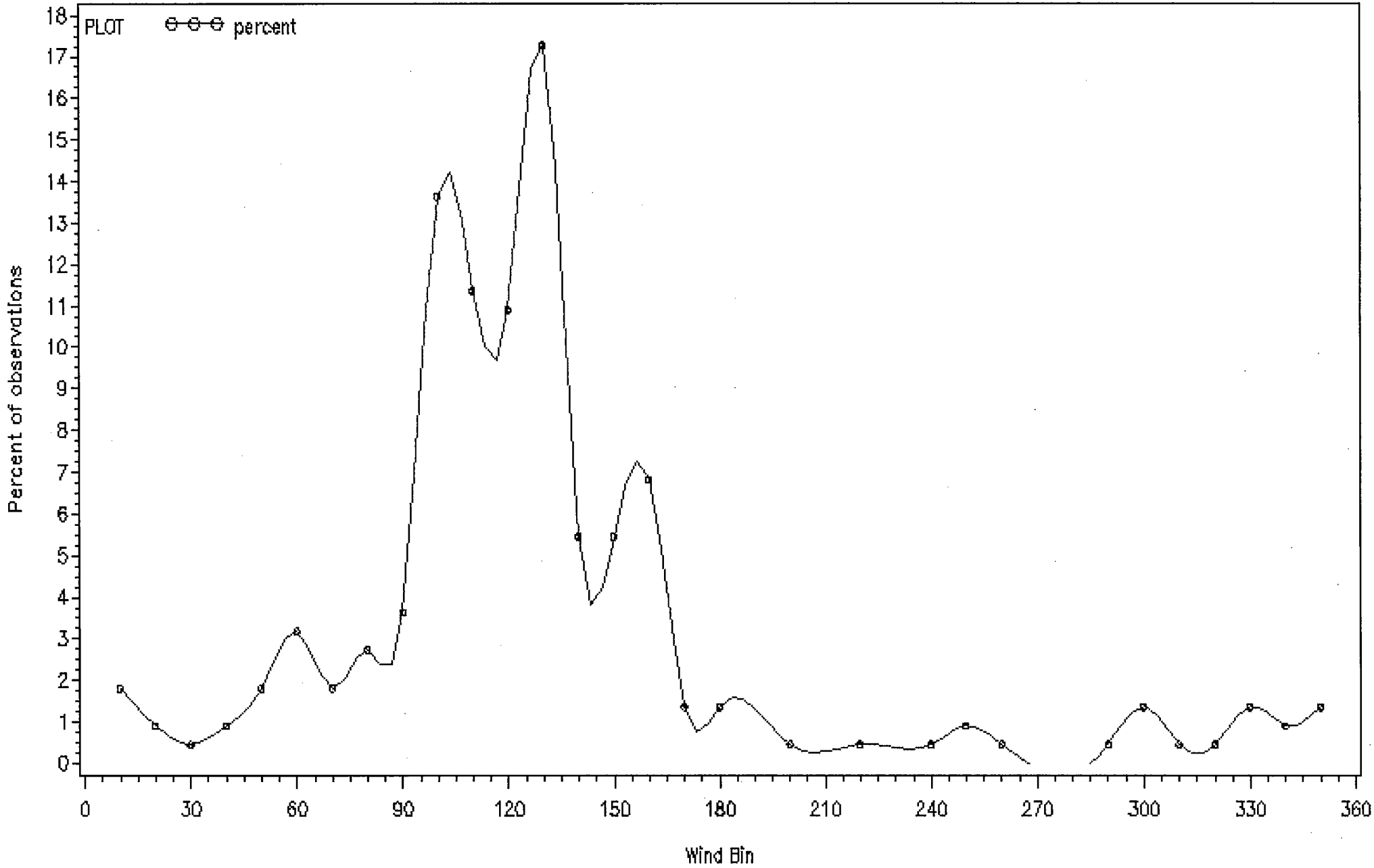
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=106 CNTYNAME=ORANGE



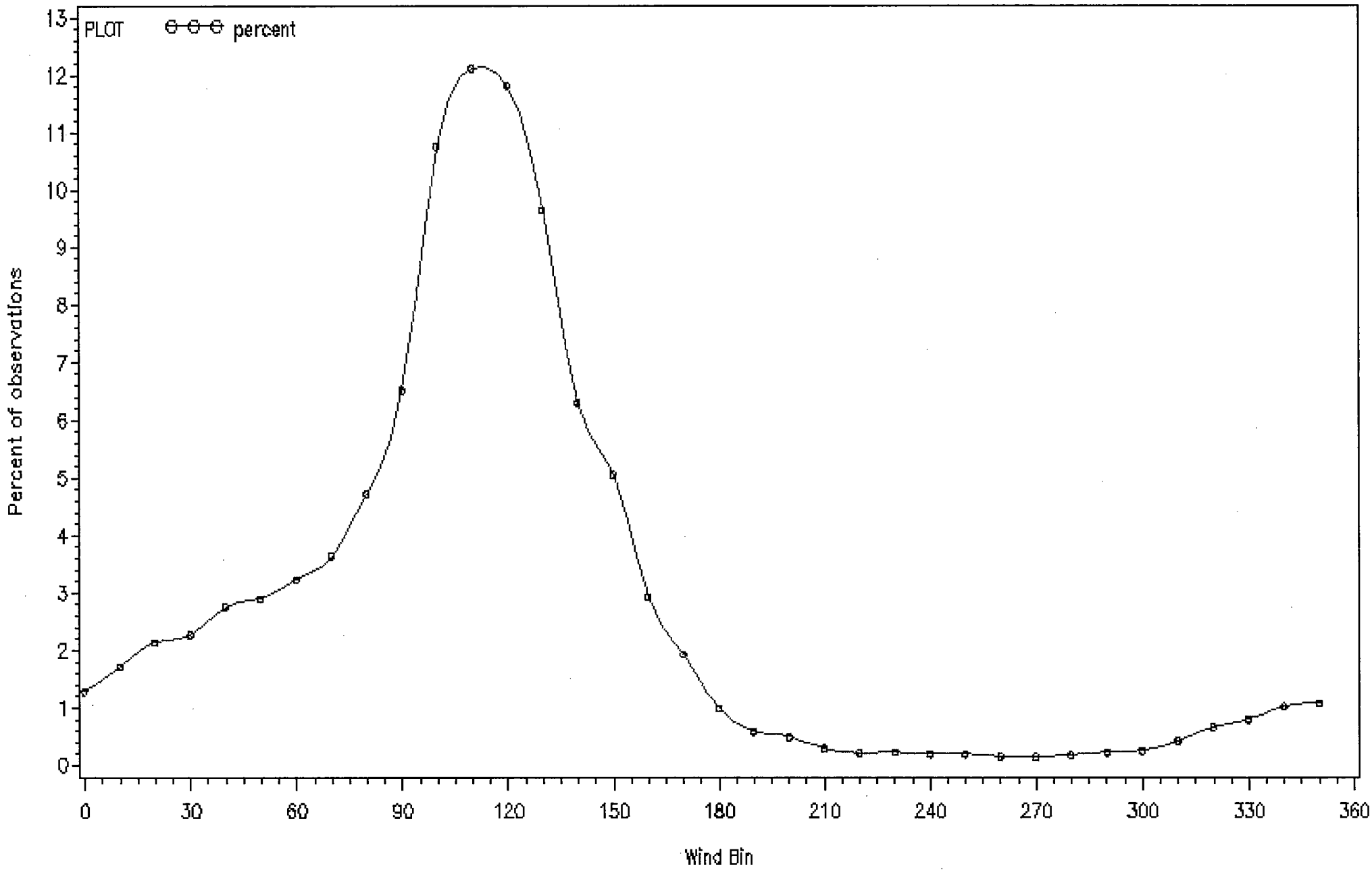
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=214 CNTYNAME=KLEBERG



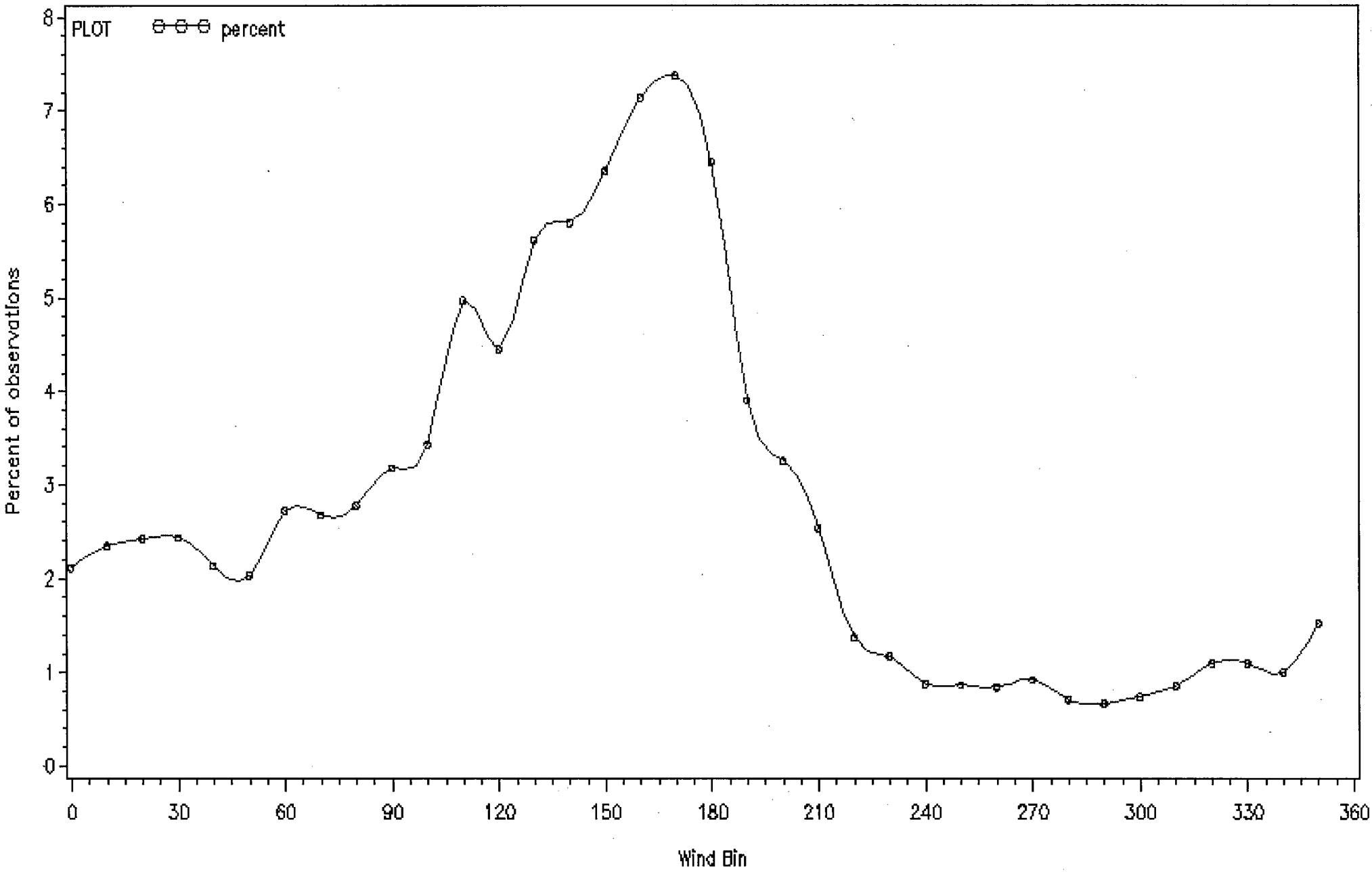
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=214 CNTYNAME=NUECES



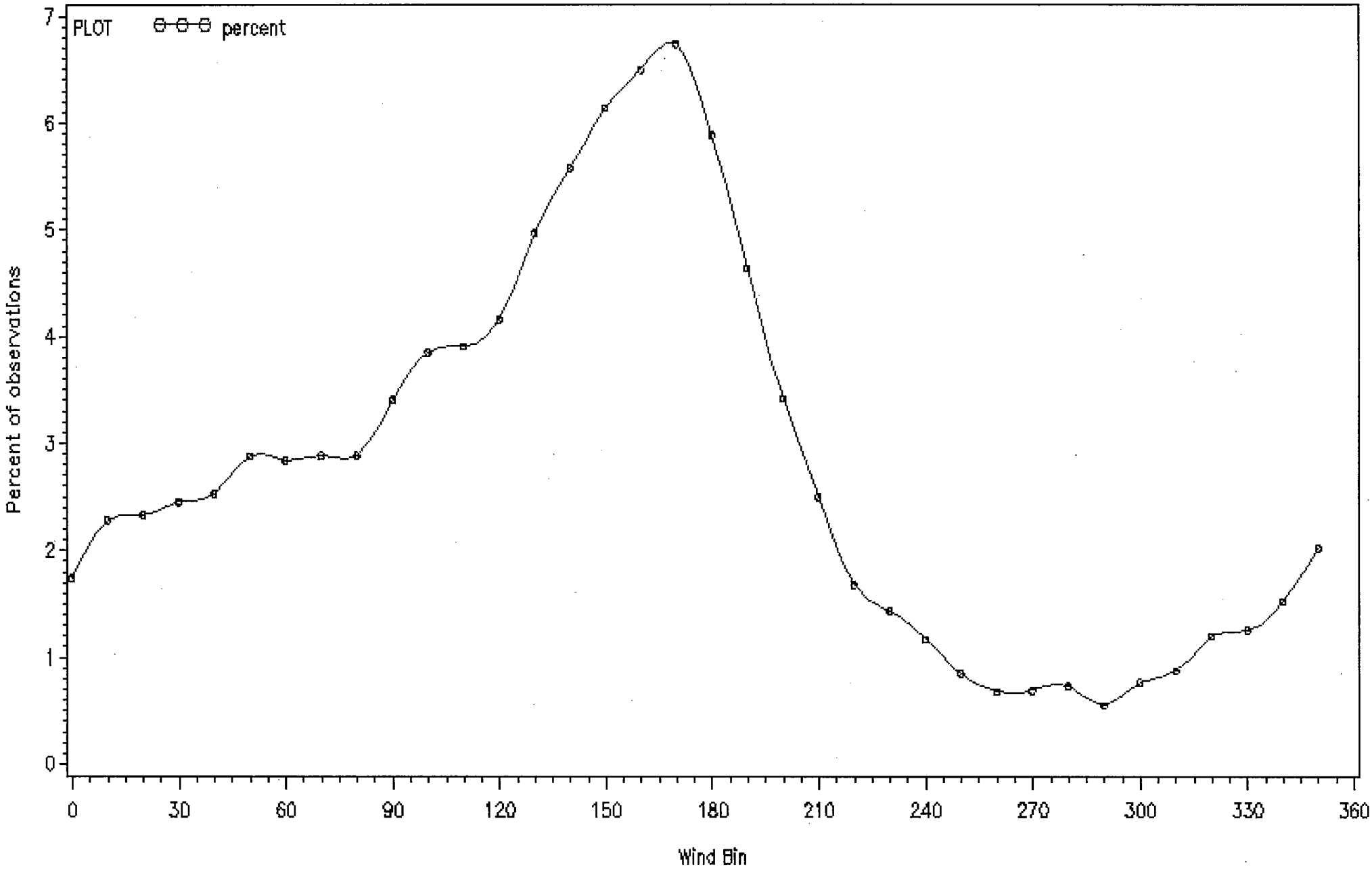
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=COLLIN



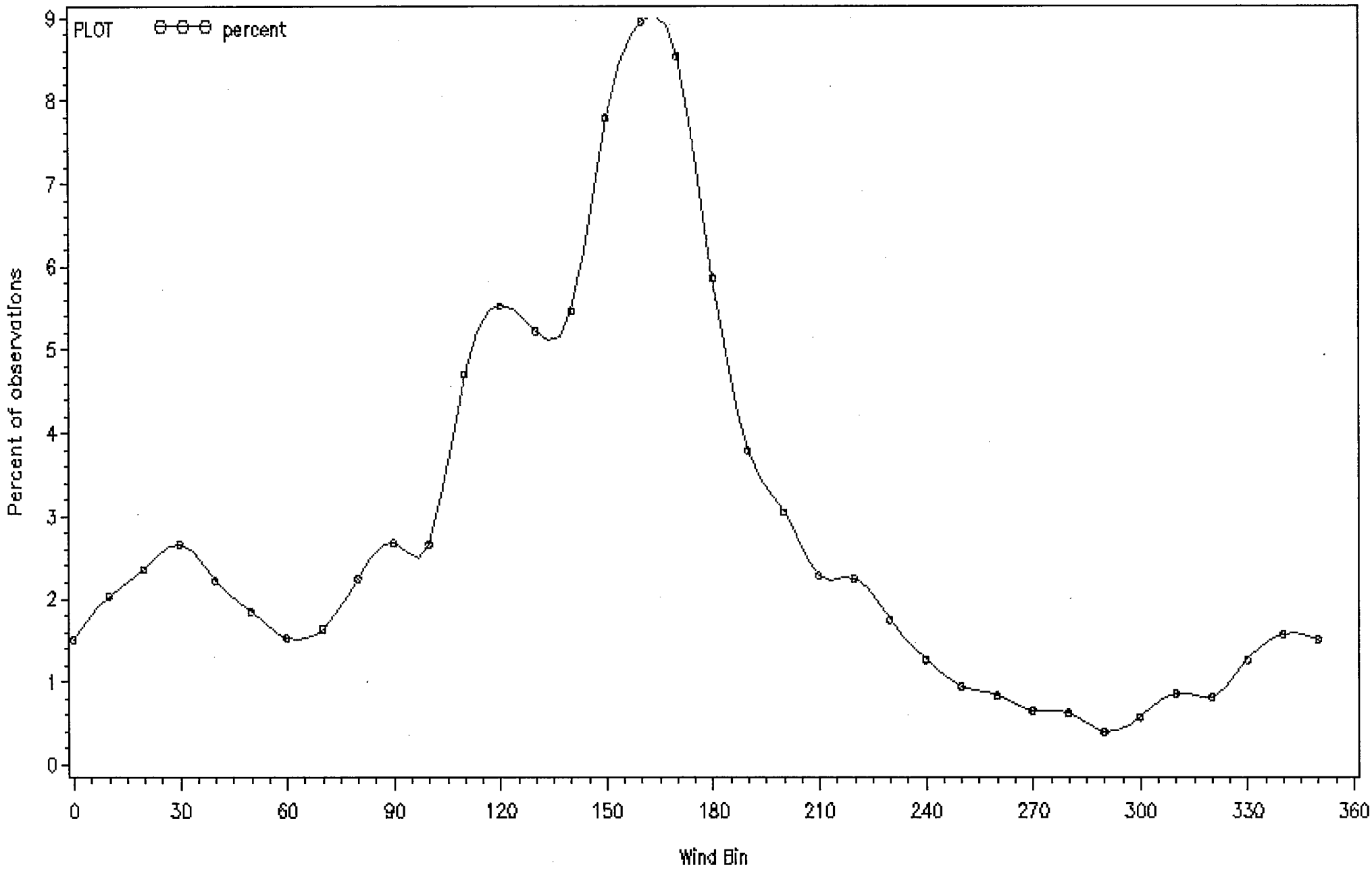
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=DALLAS



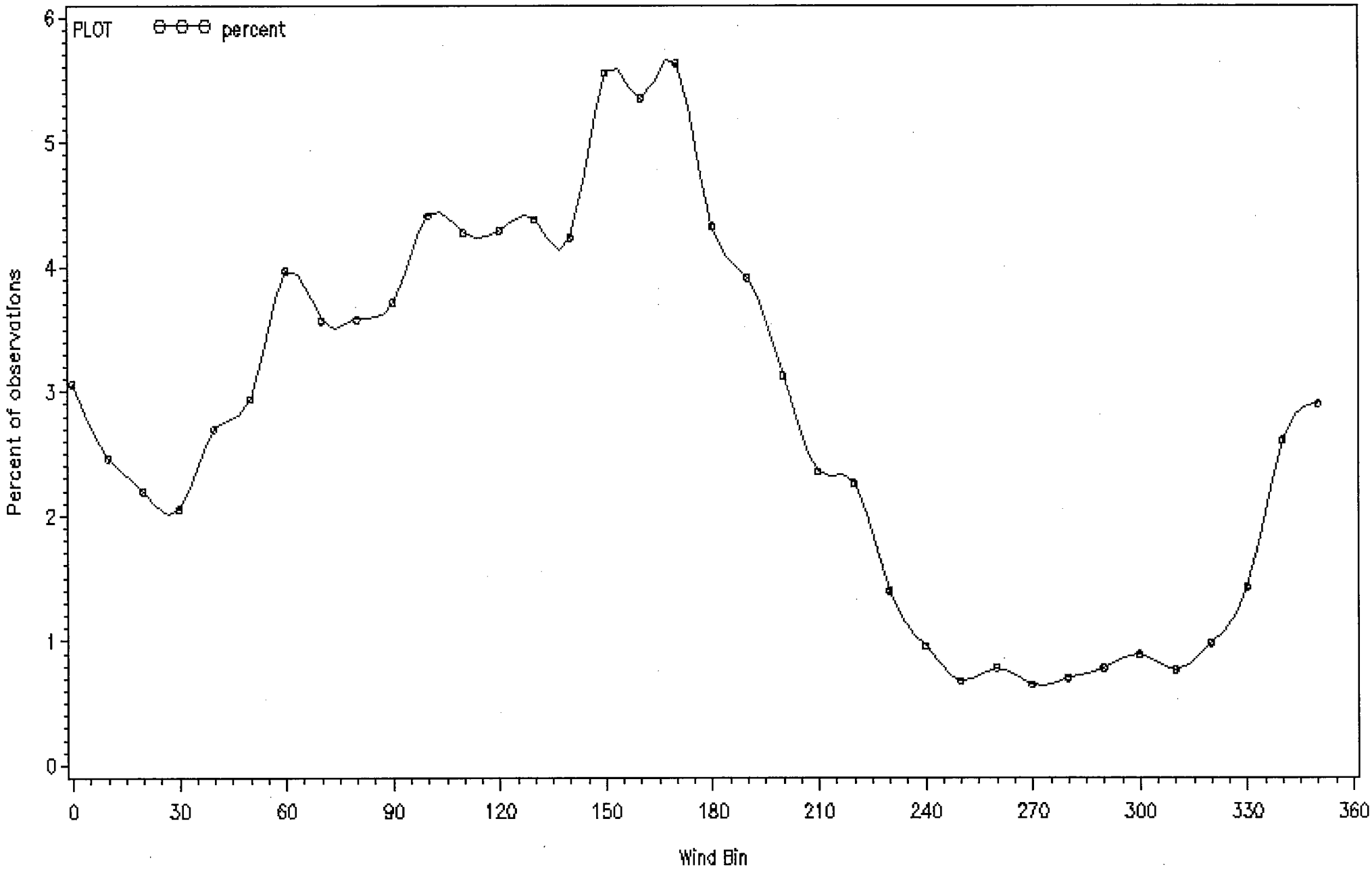
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=DENTON



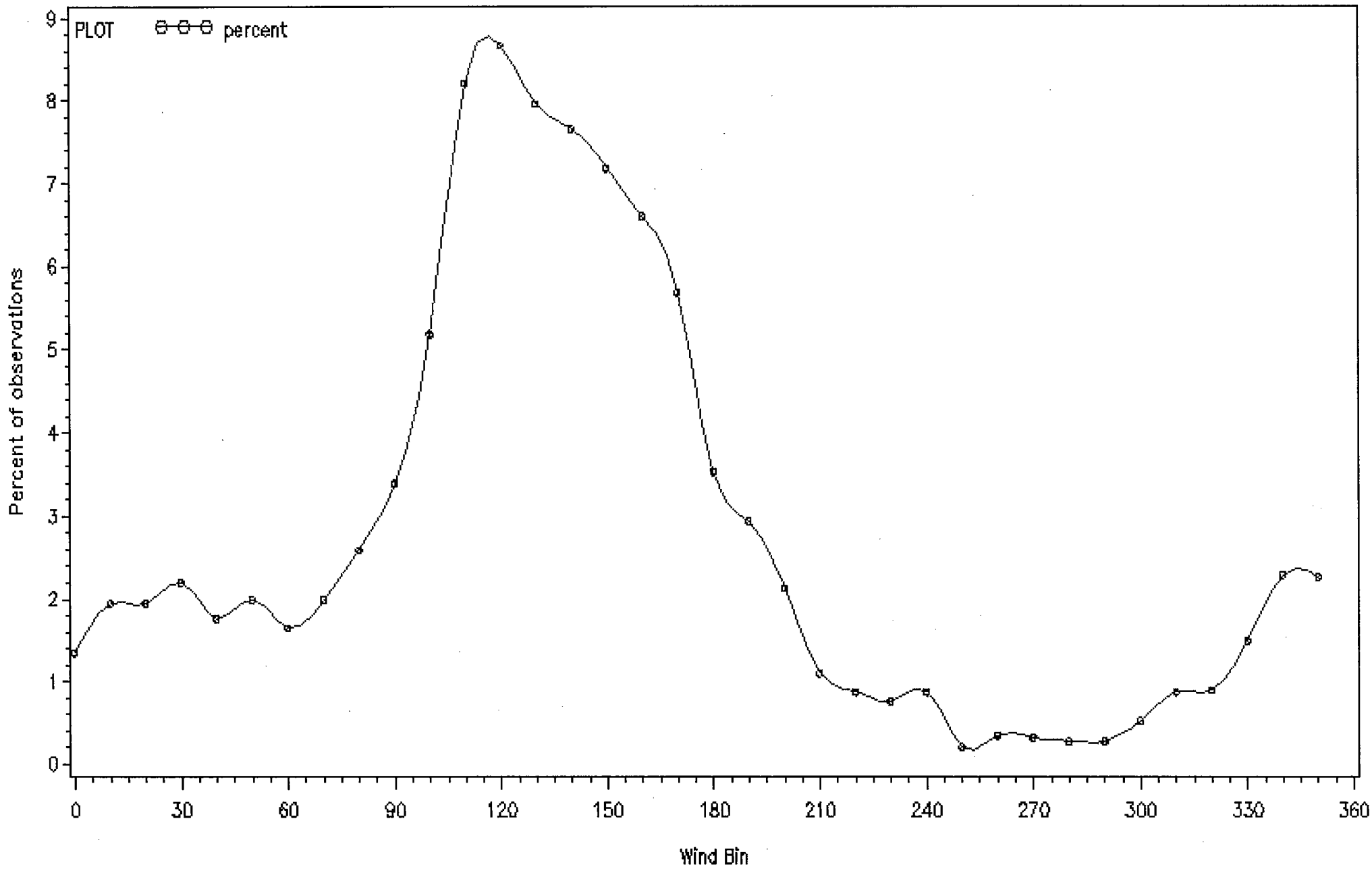
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=ELLIS



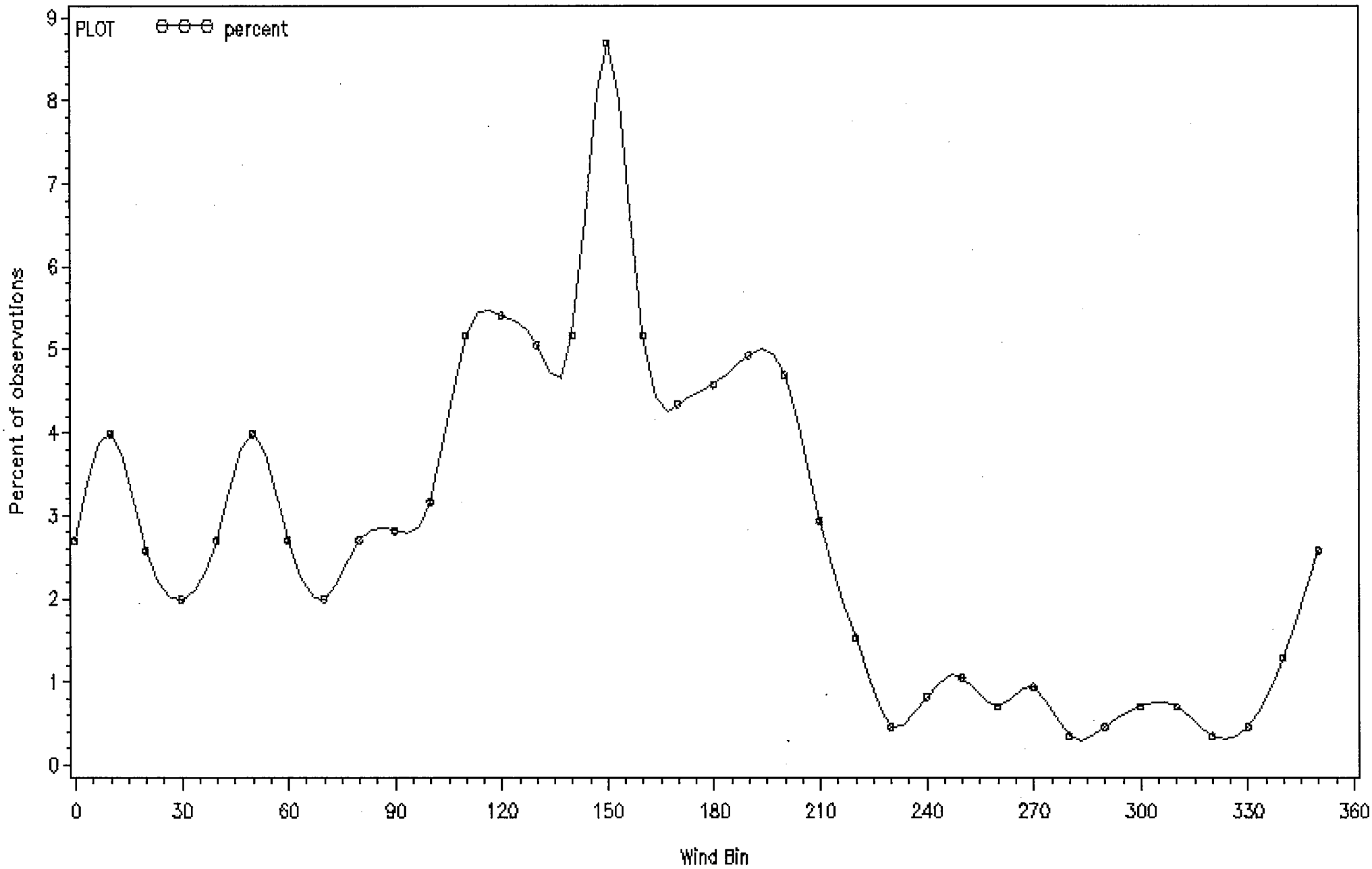
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=HOOD



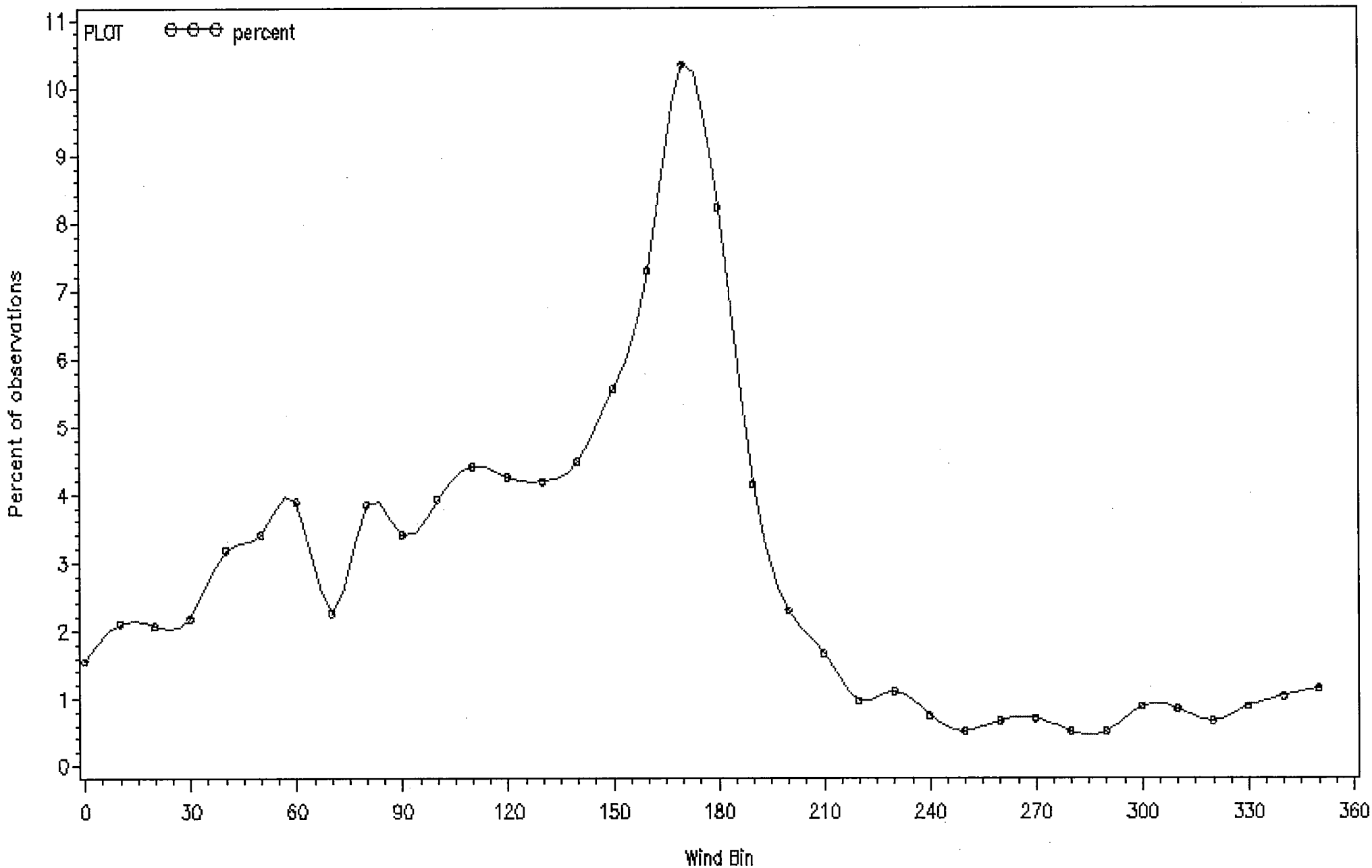
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=HUNT



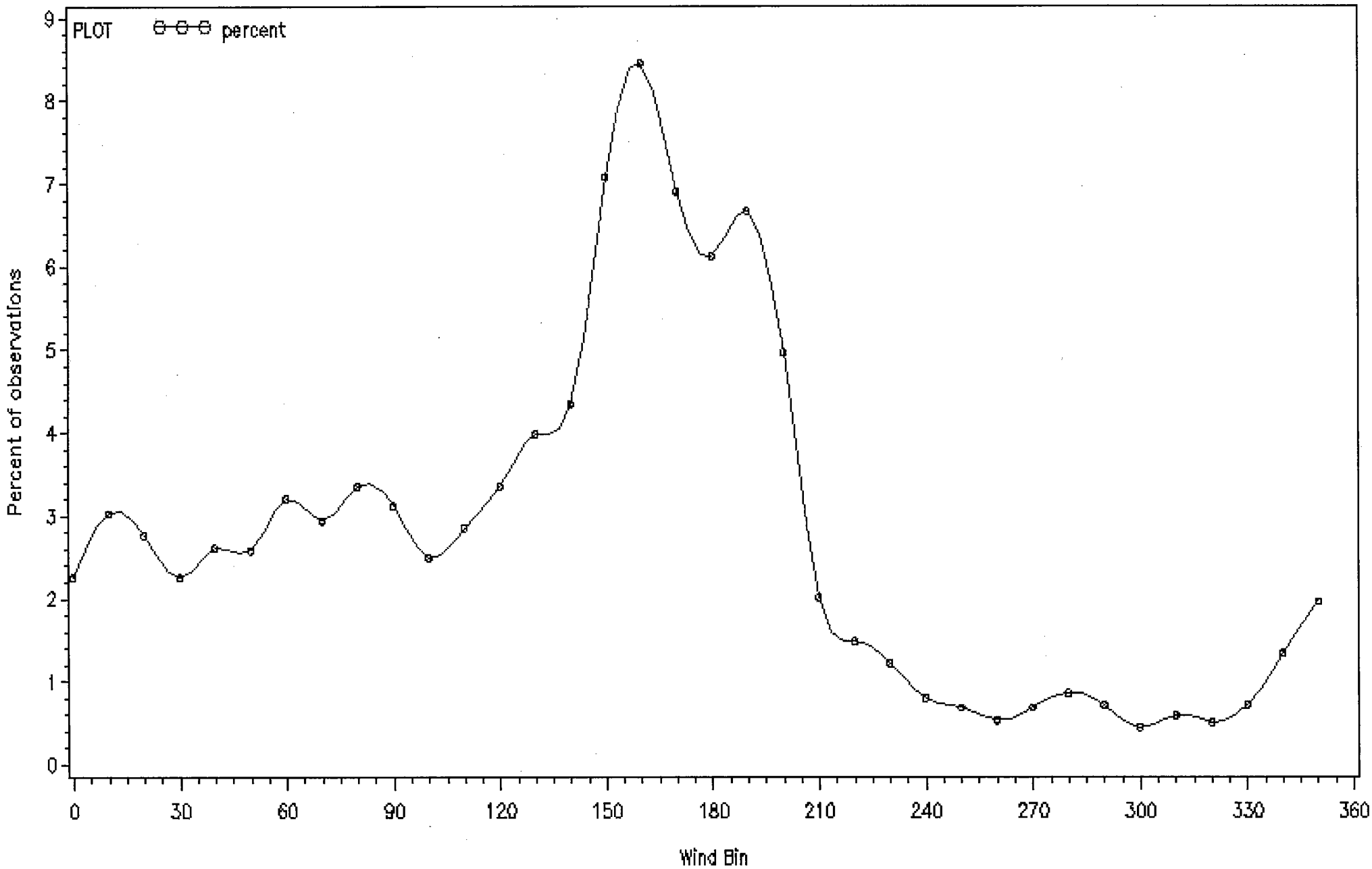
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=JOHNSON



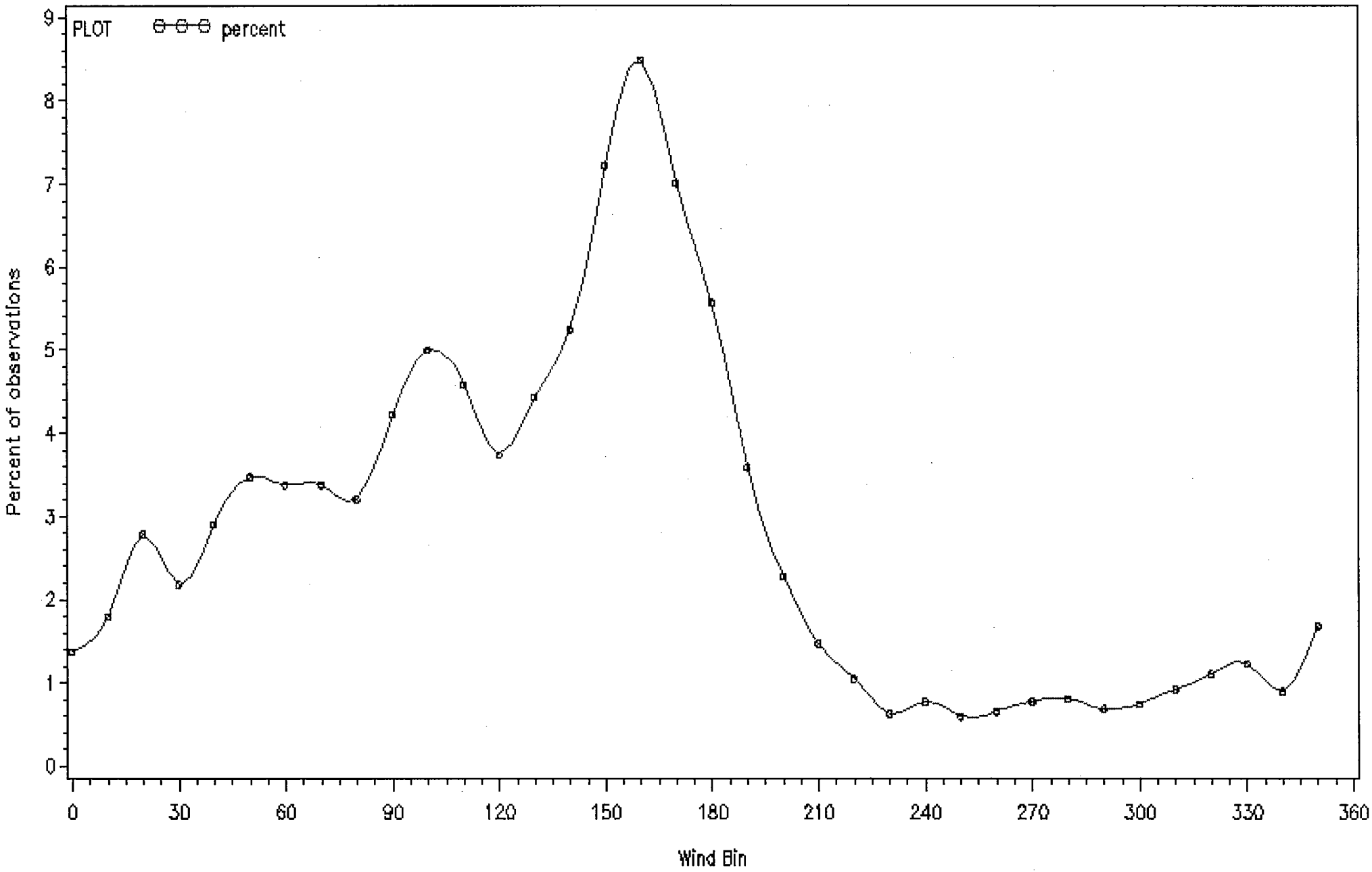
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=KAUFMAN



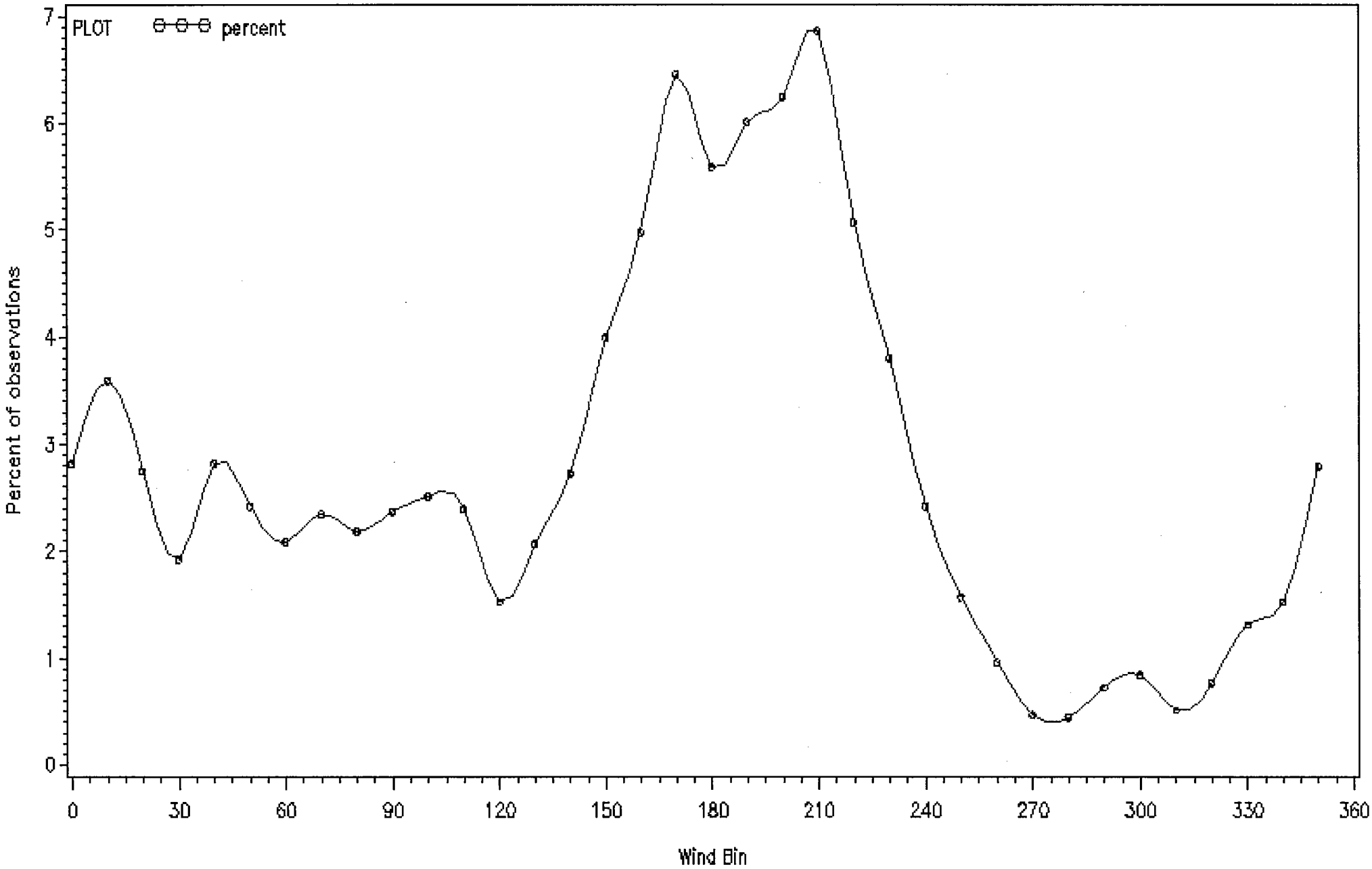
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=PARKER



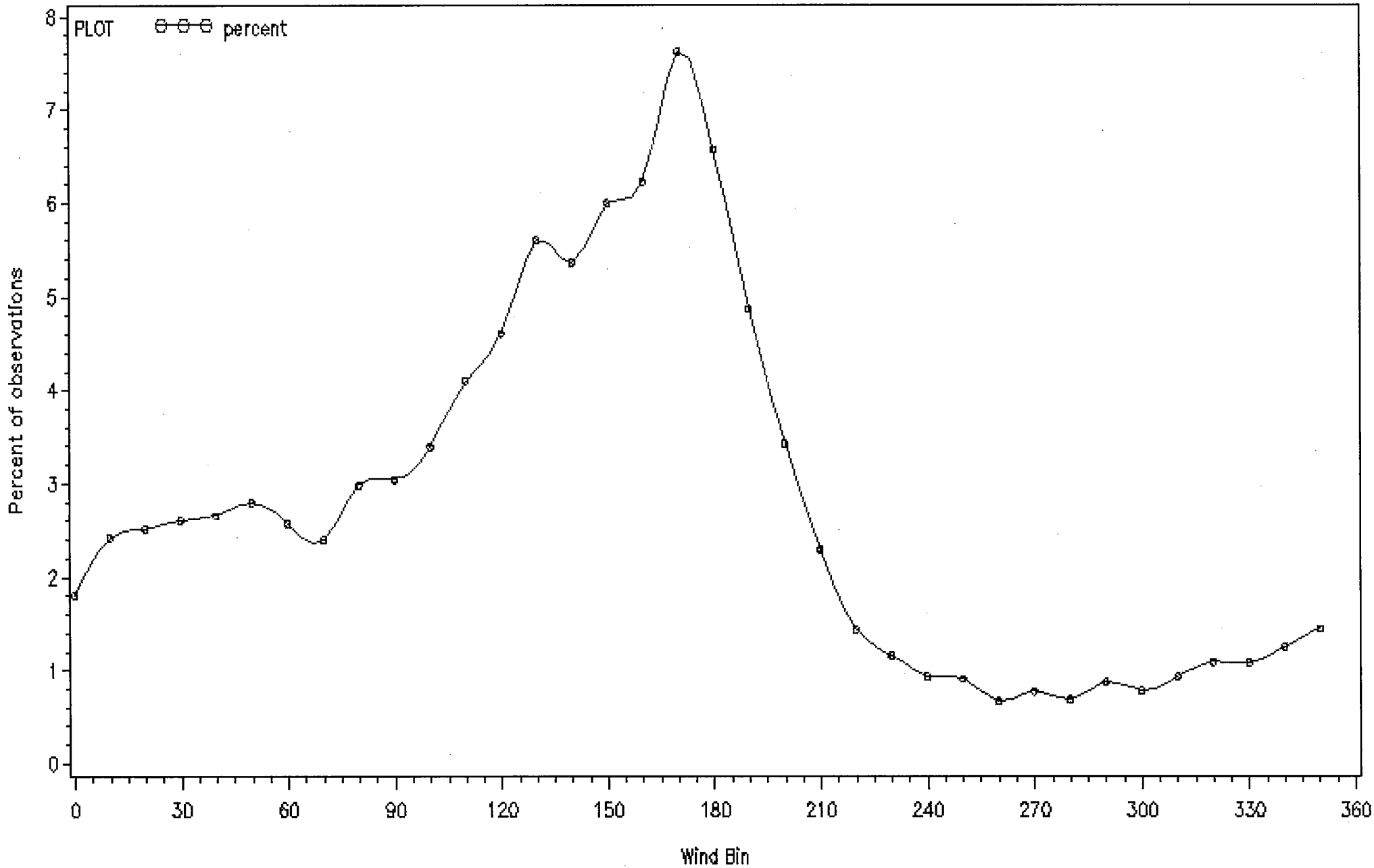
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=ROCKWALL



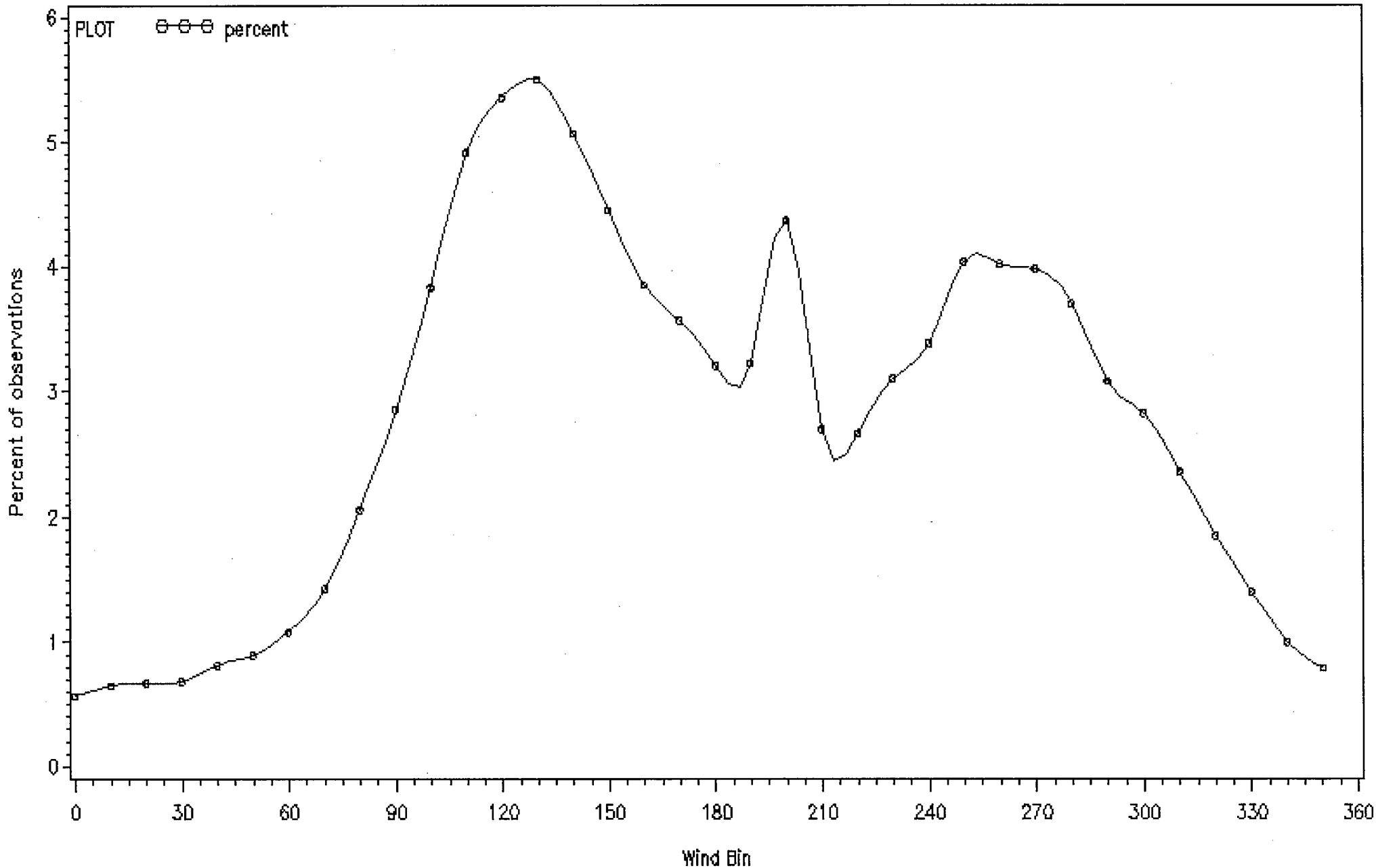
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=TARRANT



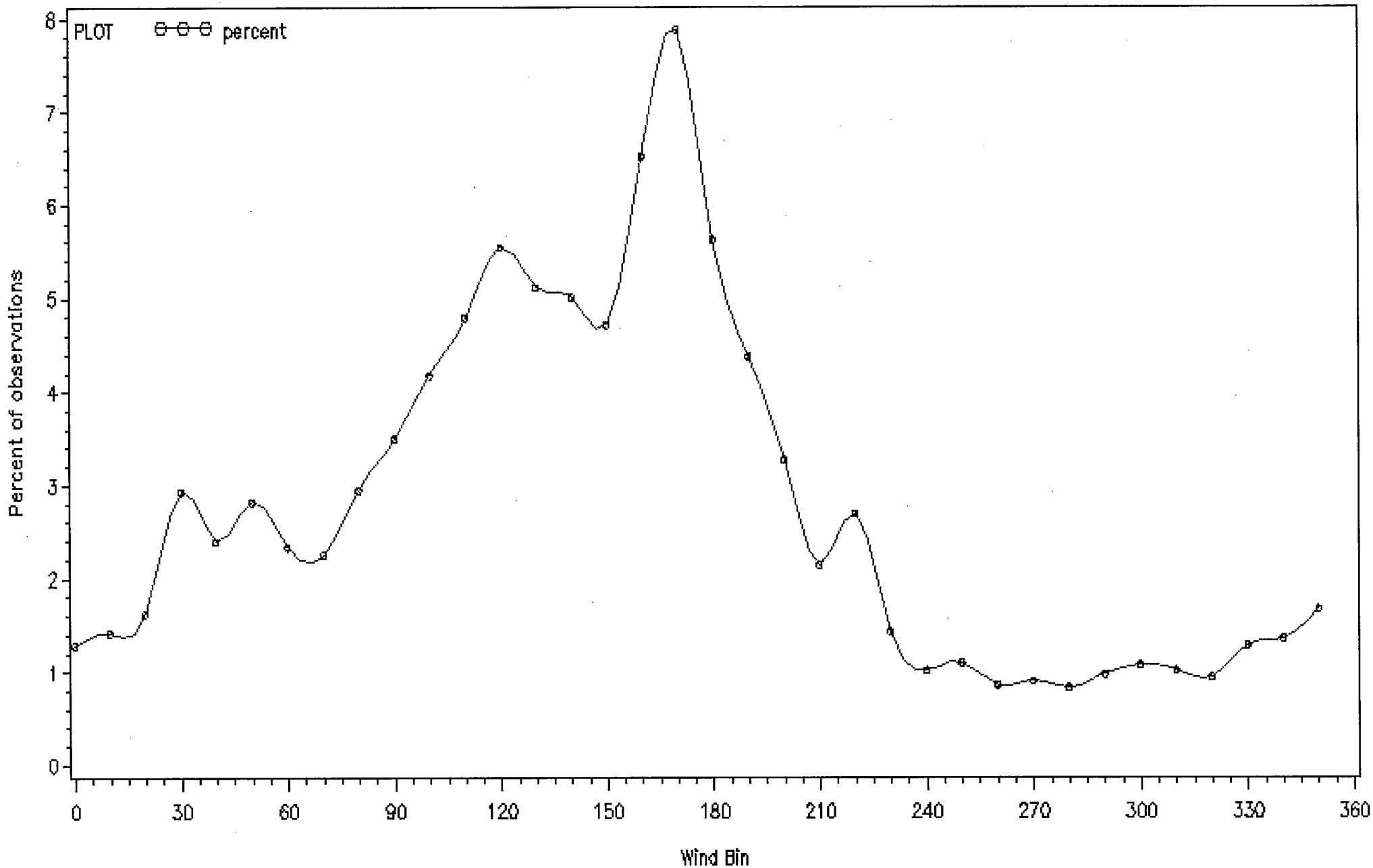
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=153 CNTYNAME=EL PASO



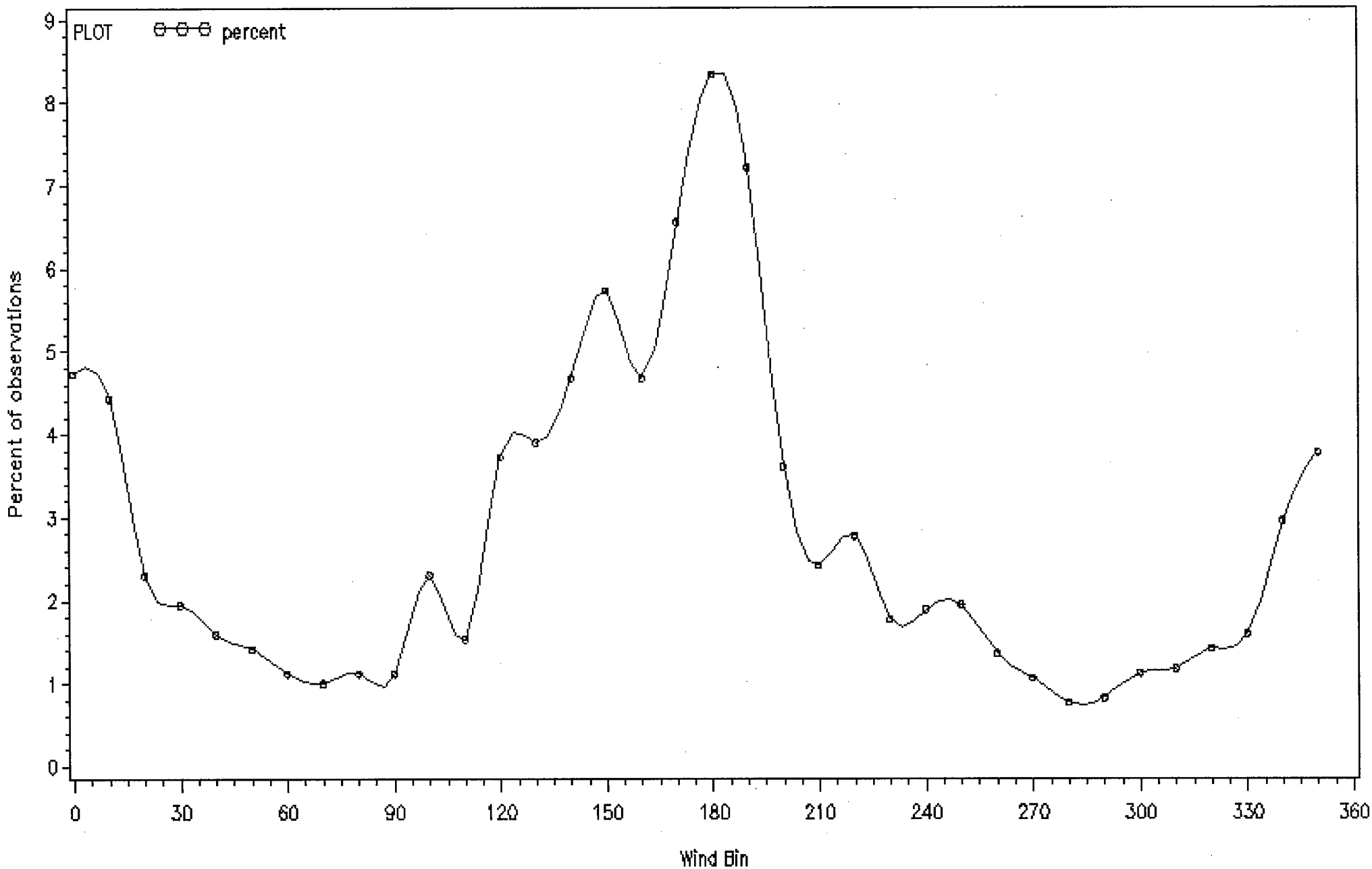
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=216 CNTYNAME=BRAZORIA



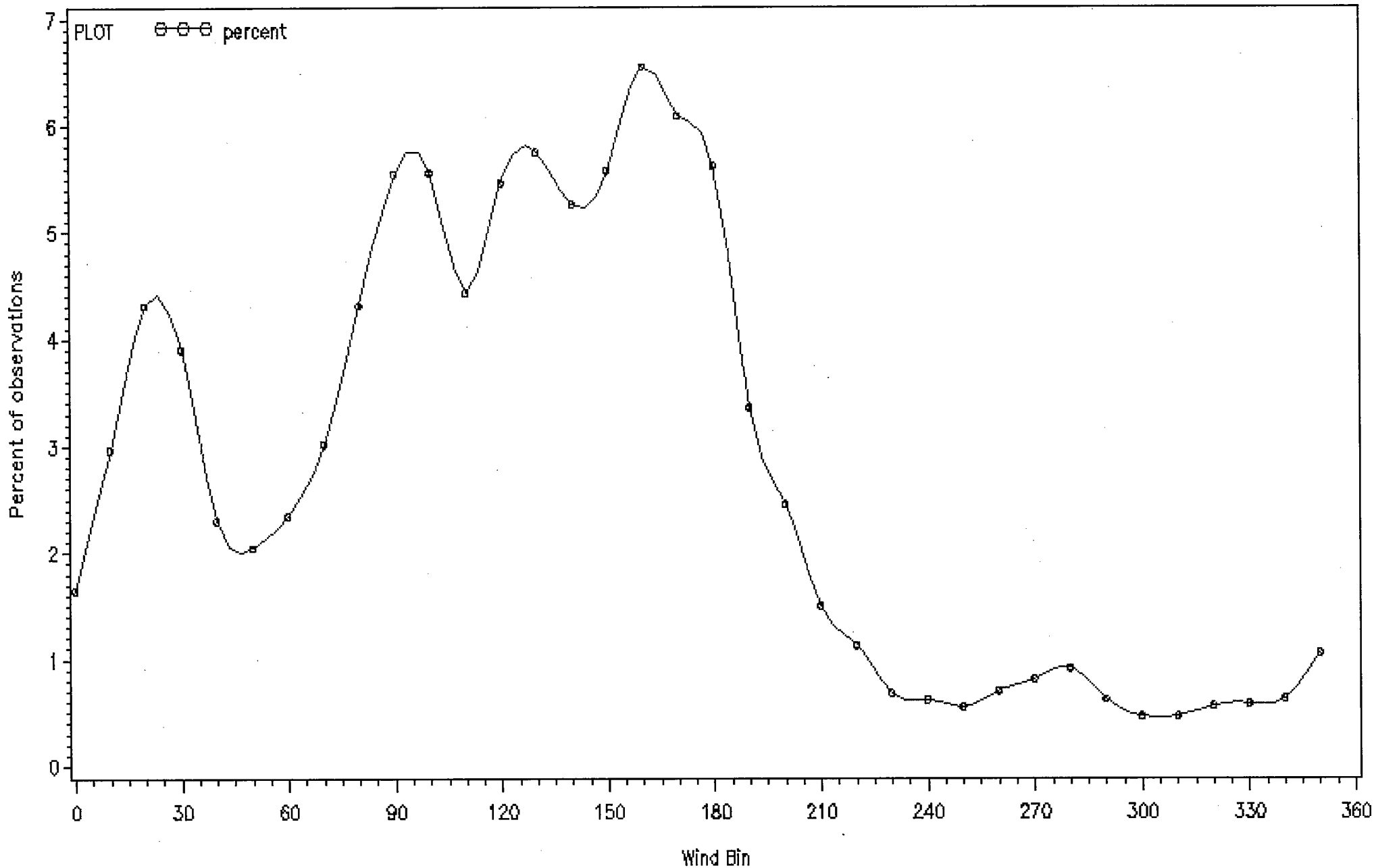
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=216 CNTYNAME=CHAMBERS



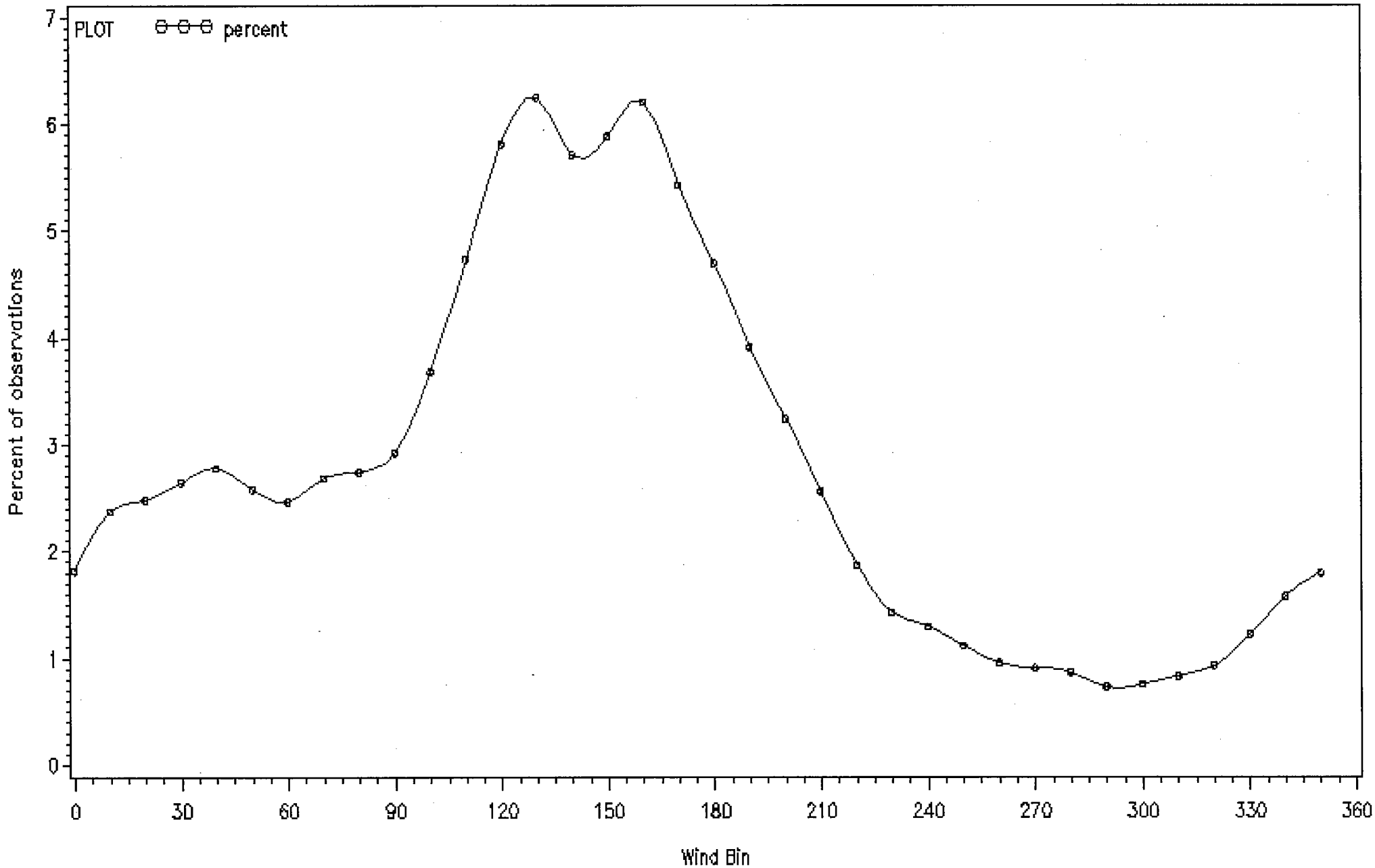
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=216 CNTYNAME=GALVESTON



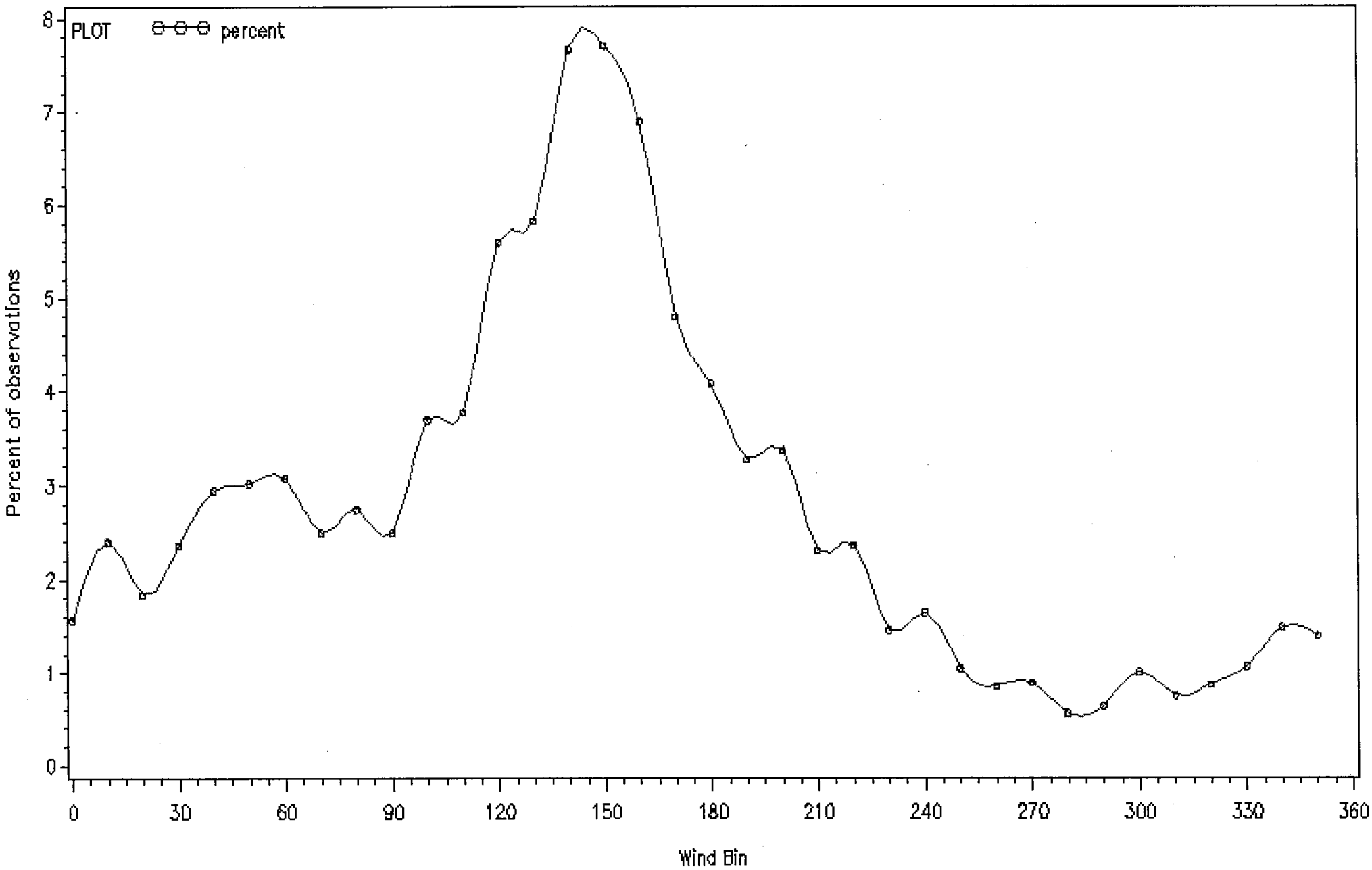
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=216 CNTYNAME=HARRIS



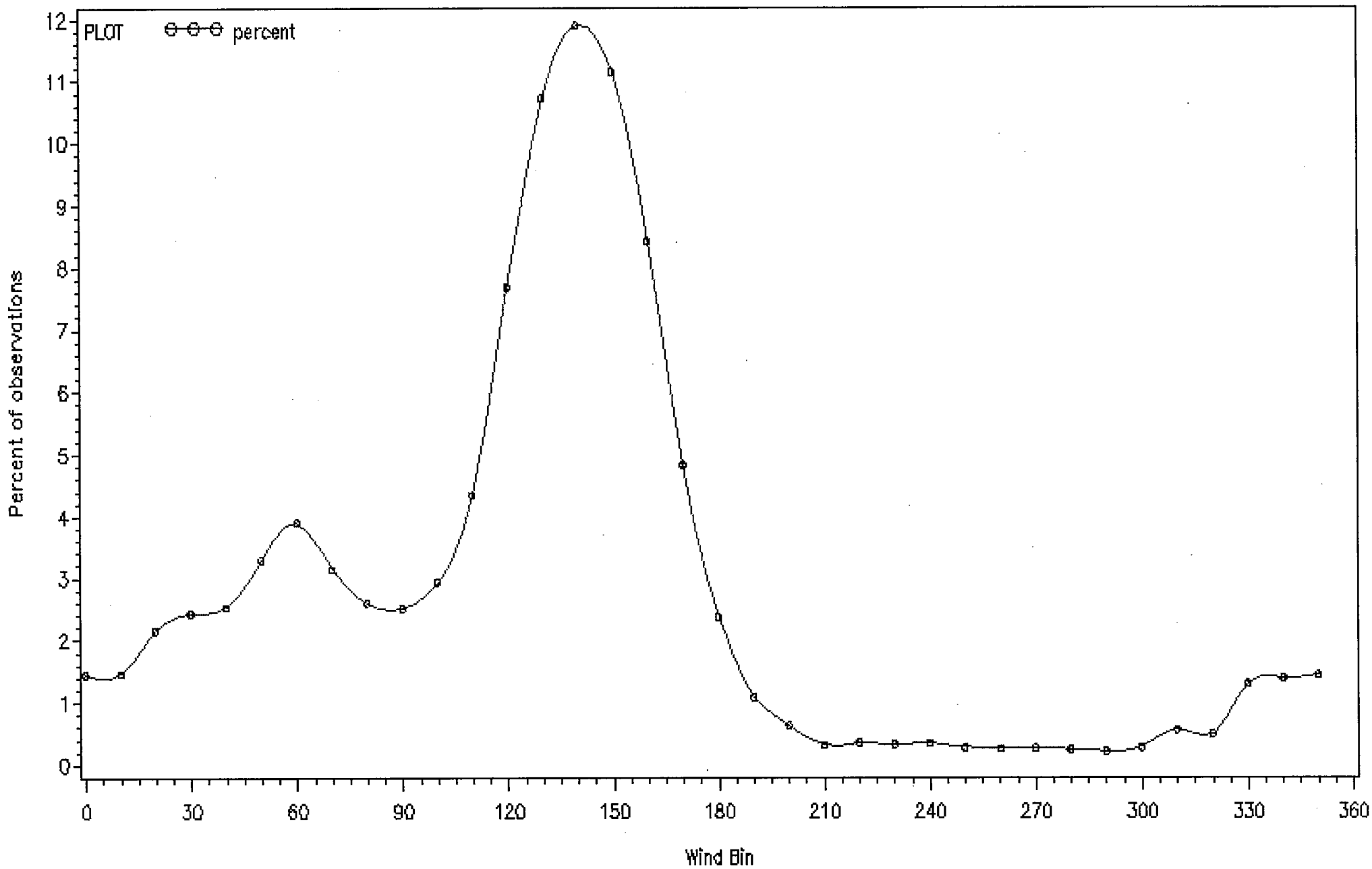
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=216 CNTYNAME=MONTGOMERY



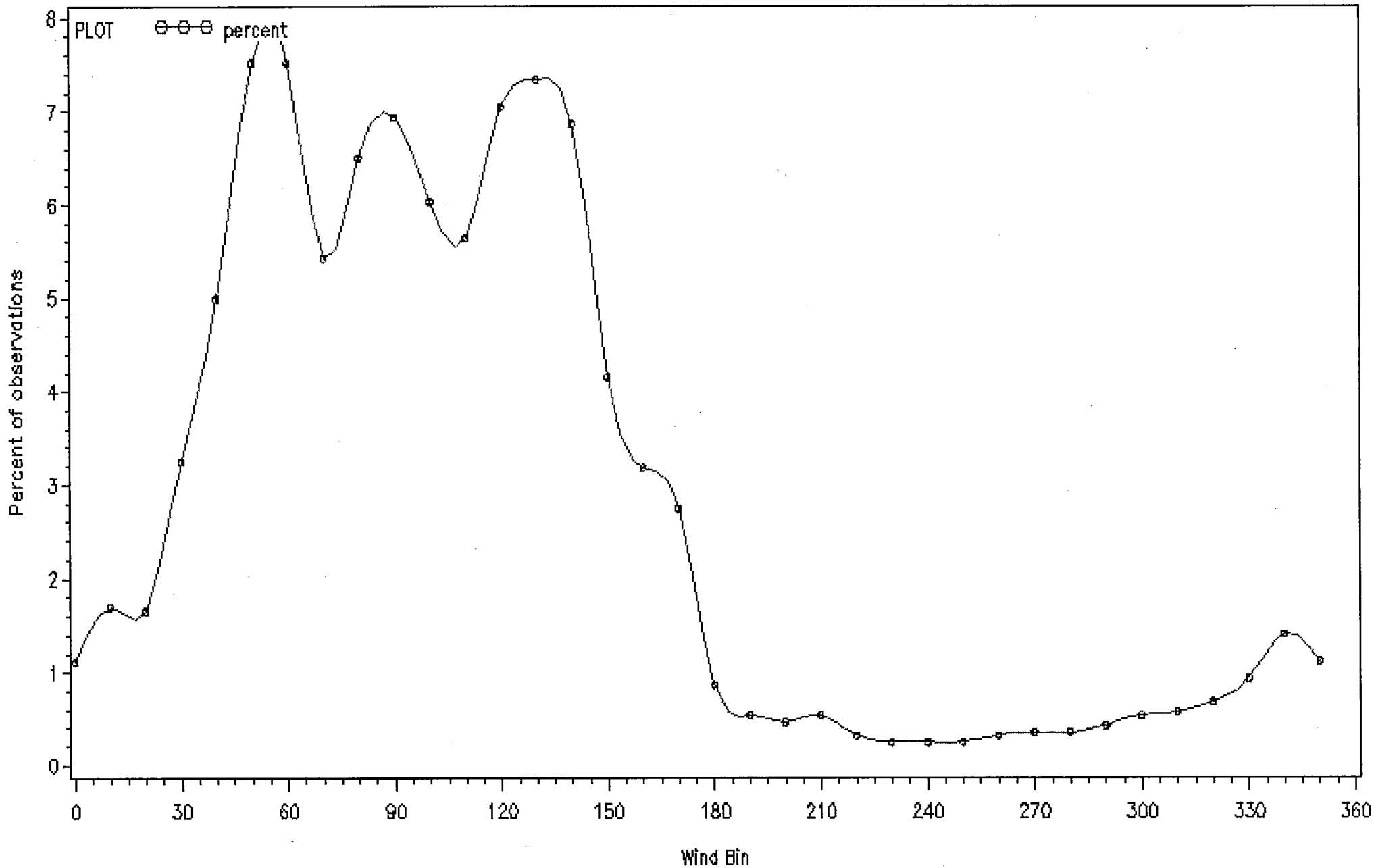
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=213 CNTYNAME=WEBB



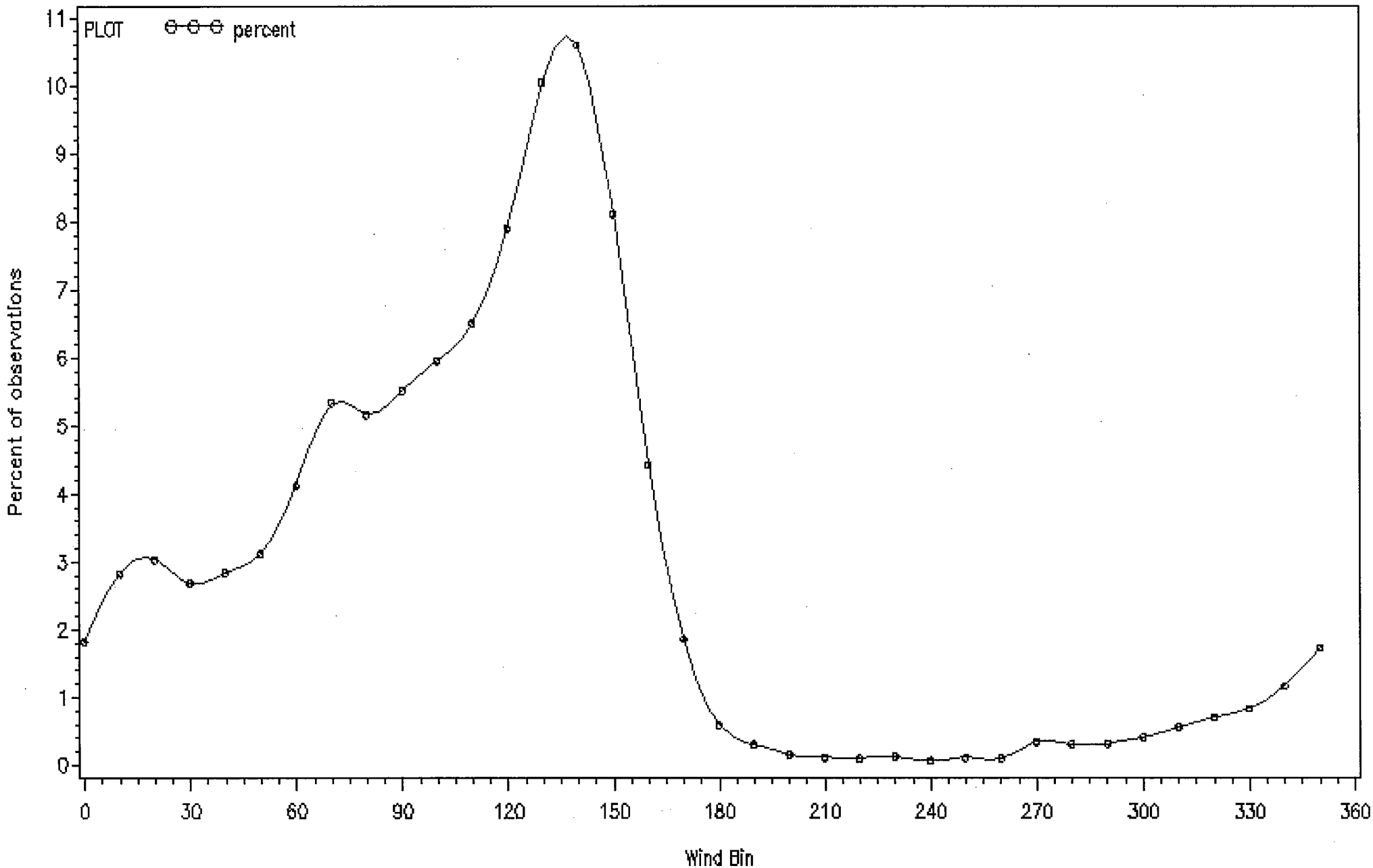
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=213 CNTYNAME=CAMERON



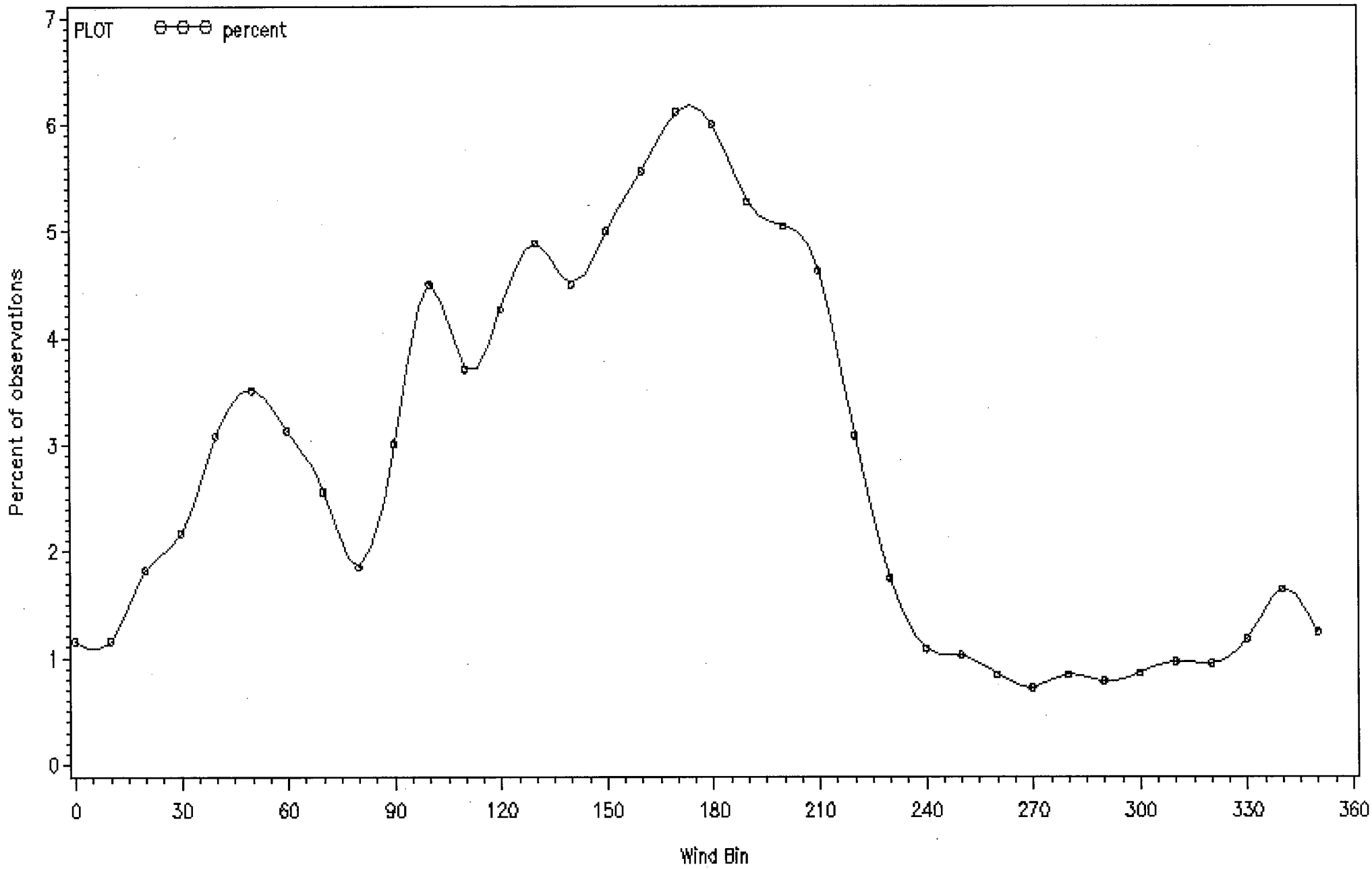
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=213 CNTYNAME=HIDALGO



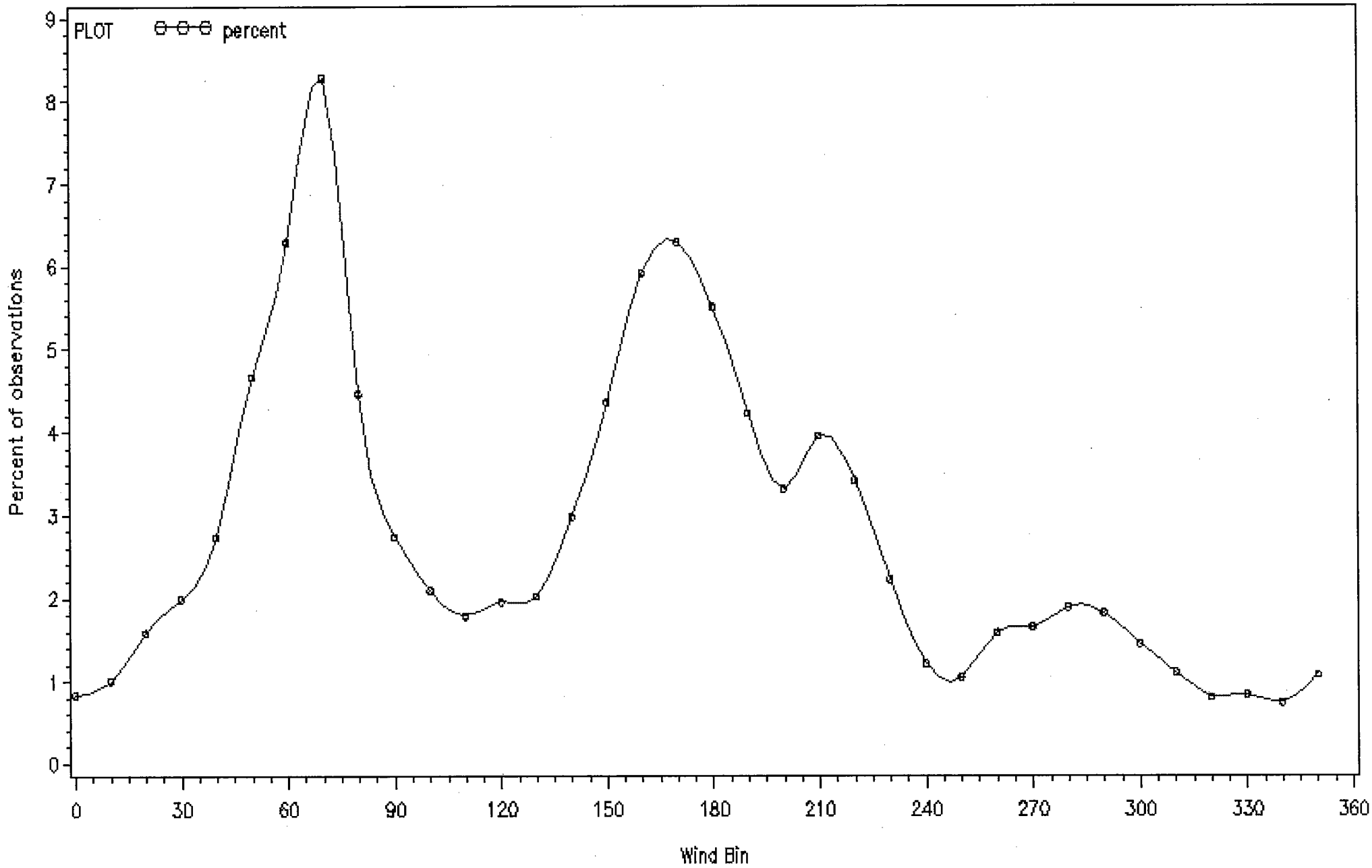
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=22 CNTYNAME=GREGG



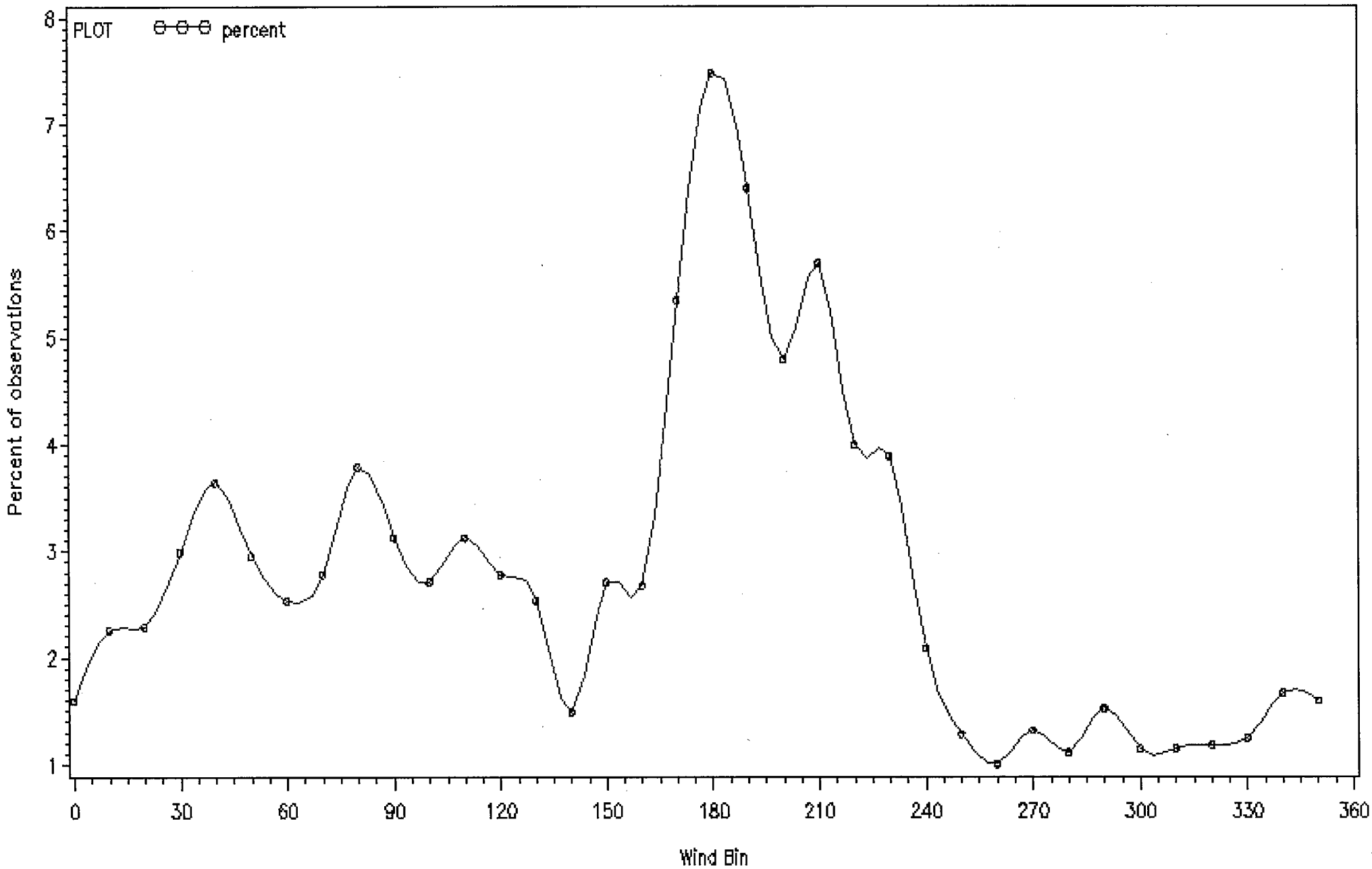
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=22 CNTYNAME=HARRISON



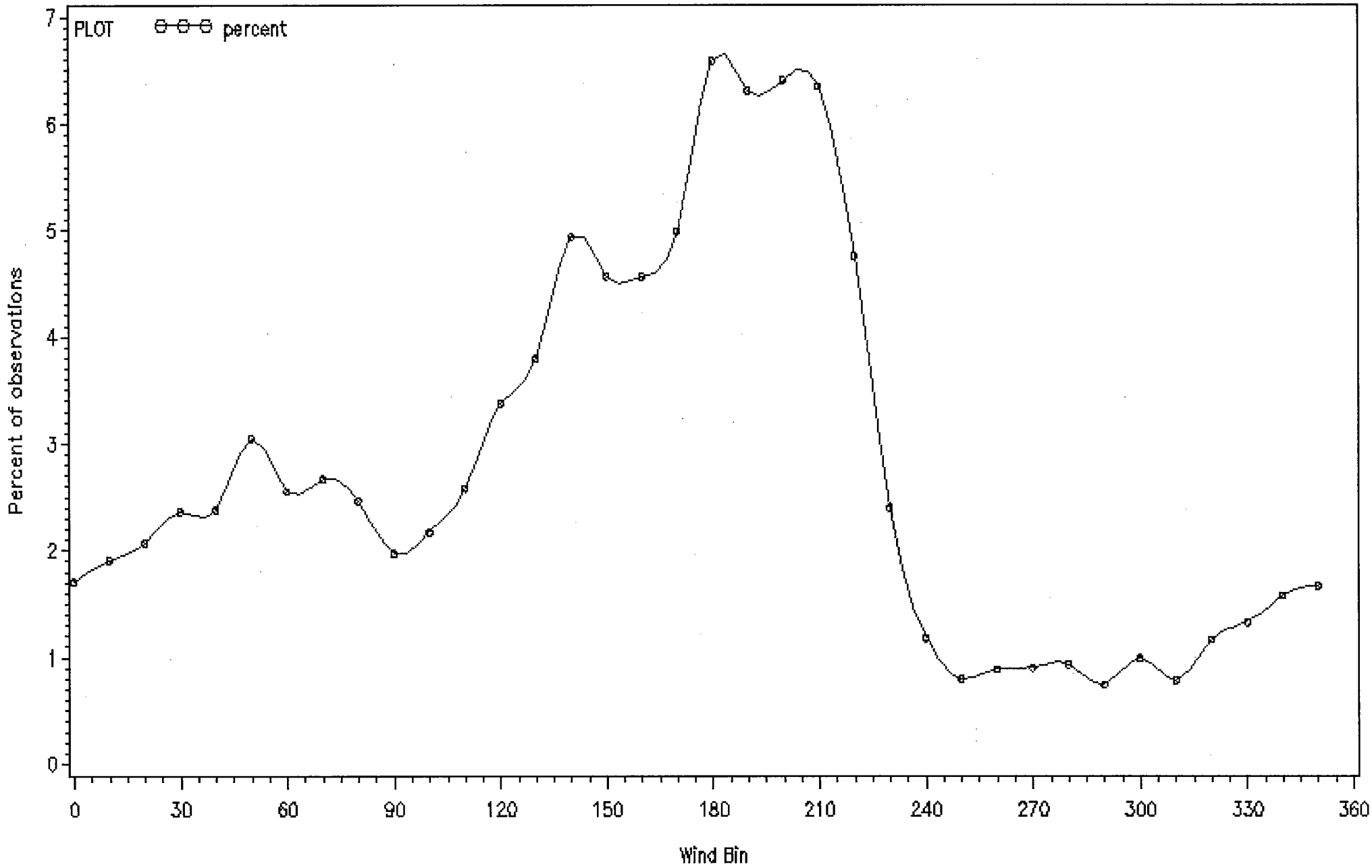
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=22 CNTYNAME=MARION



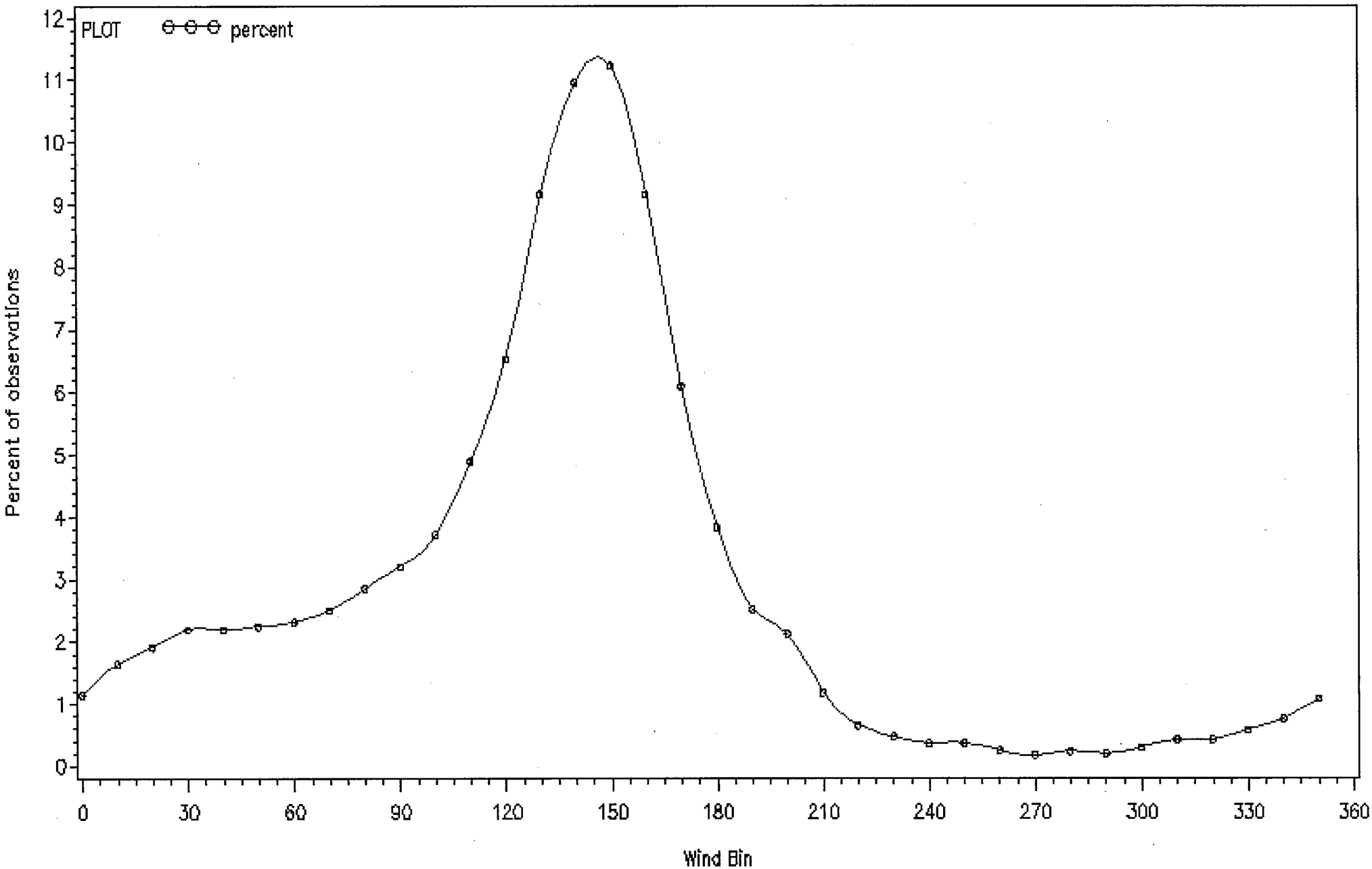
Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=22 CNTYNAME=SMITH



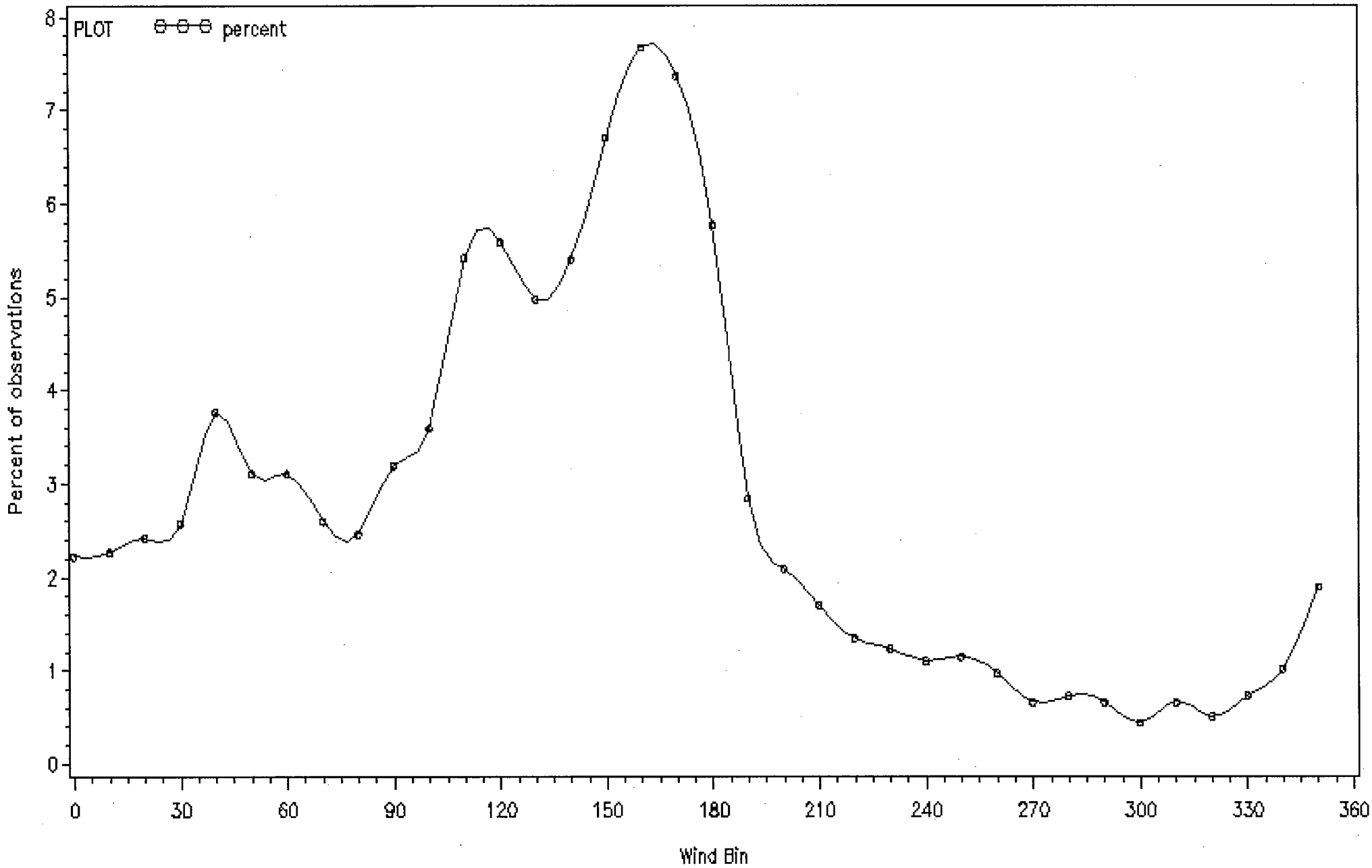
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=217 CNTYNAME=BEXAR



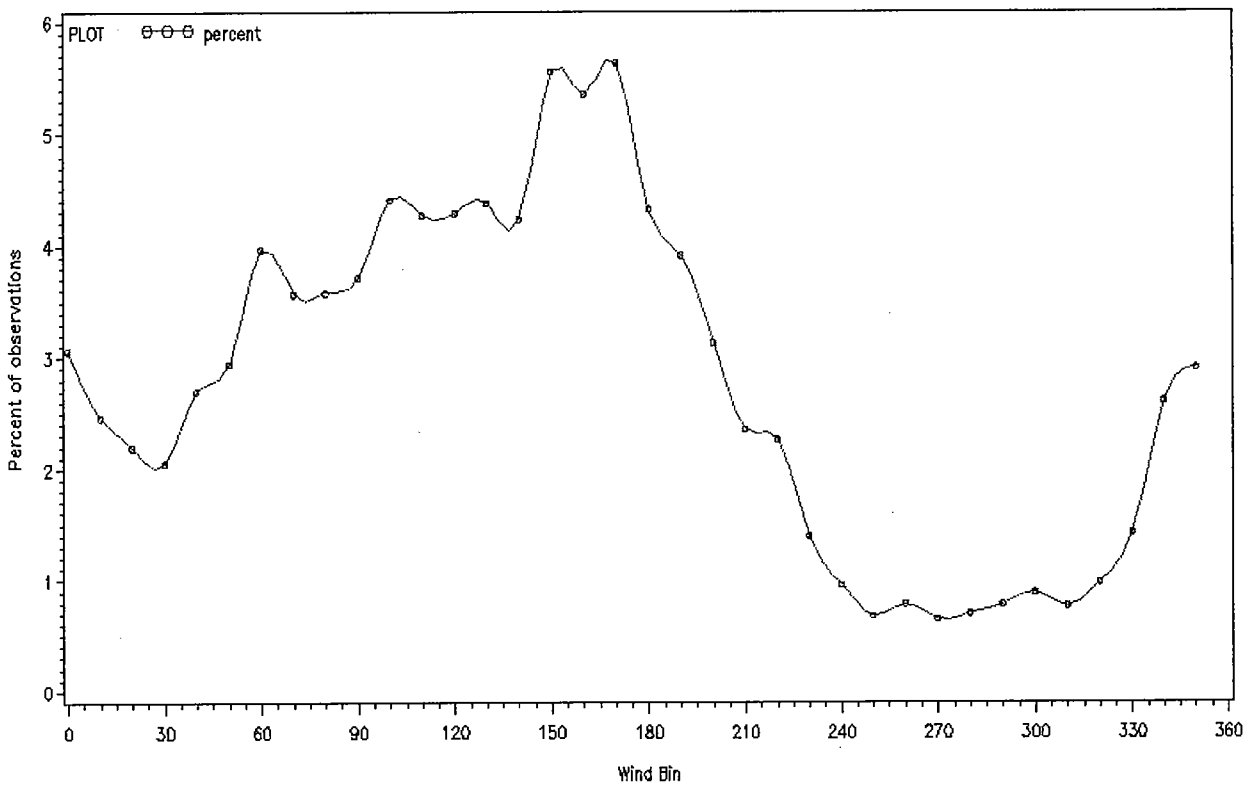
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=214 CNTYNAME=VICTORIA



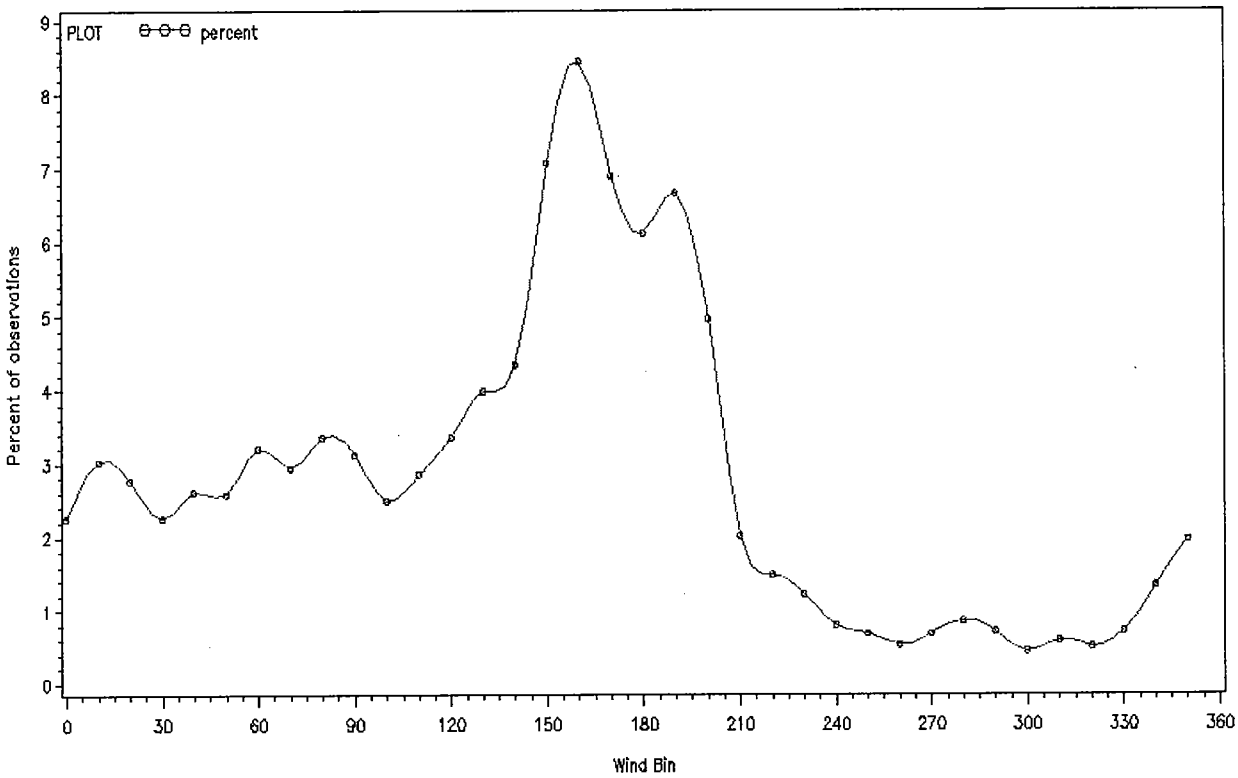
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=ELLIS



Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

AQCR=215 CNTYNAME=KAUFMAN



Journey-to-Work Data: San Antonio Ozone Near Nonattainment Area Counties Under Consideration for 8-Hour Nonattainment Designation

	Workers work in:								
	Bexar		Comal		Guadalupe		Wilson		Workers In All 4 Counties
	Number	Share	Number	Share	Number	Share	Number	Share	
90	502,381	99.35%	1,369	0.27%	1,621	0.32%	314	0.06%	**505,685**
00	581,796	98.38%	4,382	0.74%	4,591	0.78%	623	0.11%	**591,392**
	15.81%		220.09%		183.22%		98.41%		16.95%
90	6,012	28.79%	14,016	67.11%	857	4.10%	0	0.00%	**20,885**
00	11,391	35.24%	19,431	60.11%	1,468	4.54%	35	0.11%	**32,325**
	89.47%		38.63%		71.30%		N/A		54.78%
90	8,765	32.45%	3,216	11.90%	14,922	55.24%	111	0.41%	**27,014**
00	13,399	37.00%	5,260	14.53%	17,346	47.90%	207	0.57%	**36,212**
	52.87%		63.56%		16.24%		86.49%		34.05%
90	4,722	53.37%	36	0.41%	234	2.64%	3,856	43.58%	**8,848**
00	7,837	60.51%	139	1.07%	440	3.40%	4,536	35.02%	**12,952**
	65.97%		286.11%		88.03%		17.63%		46.38%
90	**521,880**	92.79%	**18,637**	3.31%	**17,634**	3.14%	**4,281**	0.76%	**562,432**
00	**614,423**	91.31%	**29,212**	4.34%	**23,845**	3.54%	**5,401**	0.80%	**672,881**
	17.73%		56.74%		35.22%		26.16%		19.64%

3/15/04 to docket, Annie, David & no e file
Tom D; EES

Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Margaret Hoffman, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 6, 2004

RECEIVED
EPA REGION VI
2004 FEB 12 PM 2:30
MULTIMEDIA PLANNING
& PERMITTING DIV.

Mr. Carl Edlund
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear Mr. Edlund:

By letter dated February 5,2004, the Texas Commission on Environmental Quality provided additional information and analysis to support the State of Texas 8-hour ozone designation recommendations. In addition to that analysis, I am also providing further information requested by your staff during a January 9, 2004 meeting as well as a table that summarizes all of the data used in our analysis of the U.S. Environmental Protection Agency's (EPA) eleven exclusion criteria found in EPA's March 28, 2000 boundary guidance document.

Enclosed is the following information:

- A summary table of data addressing the 11 criteria entitled "TCEQ's Evaluation Table of EPA's 8-hour Ozone Designation Boundary Guidance Exclusion Criteria",
- Maps of the locations for sources in the affected counties,
- Wind histograms for the affected counties,
- Emissions by category for both the base and future cases, and
- Traffic and commuting patterns for the SAN area.

Information of the applicability of NOx emission controls on electric generating units in Hood County has been previously provided.

If you need further information or have questions, please feel free to contact me or Mr. Herb Williams of my staff at (512) 239-5588.

Sincerely,

Randolph Wood

Randolph Wood, Deputy Director
Office of Environmental Policy, Analysis and Assessment

Enclosures

TCEQ's Evaluation Table of EPA's 8-hour Ozone Designation Boundary Guidance Exclusion Criteria

The following tables are intended to evaluate each county in the Dallas/Fort Worth and San Antonio areas that may be subject to a nonattainment designation for EPA's 8-hour ozone standard. They are arranged by existing 1-hour nonattainment area and/or C/MSA and includes some adjacent counties that EPA will likely suggest should be included in any nonattainment recommendation. Each table is arranged in the order of the exclusion criteria listed in EPA's March 28, 2000 Boundary Guidance as summarized on the attached page. Each criteria has been designated by a unique identifier (such as E1 designates the first listed exclusion criteria - "Emissions and air quality...") and at least one column on the table has been identified as addressing that criteria.

Legend:

- E1 data (emissions) are based on 1999 Emissions Inventory data average ozone season weekday
- E2 data (population) is April, 2000 population figures from the U.S. Census Bureau
- E3 data is based on the monitoring data for 2001-2003. The value shown is the "area design value," a statistic calculated from the observed ozone data and compared with the level of the national ambient air quality standard (NAAQS) (85 parts per billion (ppb)) to determine compliance or severity of noncompliance. Using hourly average ozone measurements at each of the state's approximately 80 ozone monitors, rolling eight-hour average ozone concentrations are calculated, and the maximum value for each day is used to determine daily exceedances of the level of the NAAQS. If any monitor within an urban area exceeds the NAAQS on a day, that day is termed "an 8-hr exceedance day." At the end of the calendar year, the fourth highest 8-hr average at each site is averaged with the fourth highest value from each of the two preceding years to calculate the monitor's design value. Within an urban area, the maximum monitor design value is the area design value. Note that in calculating rolling 8-hour averages and three-year design values, numbers resulting from calculation are truncated to integer ppb units.
- E4 Location of emission sources - number of EI accounts in each county which is a close approximation of the number of major VOC and/or NOx sources in each county
- E5 data (traffic and commuting patterns) columns are as follows:
  - 2000 VMT is fromTxDOT RIFCREC reports, based upon historical HPMS AADT VMT, VMT is adjusted to represent a daily average for Monday through Friday during the ozone season
  - Future VMT (2010 or 2007) is a forecast based upon historical HPMS AADT VMT and Population projections from Texas State Data Center (scenario 0.5)
  - 2010 or 2007 VMT % is % of total VMT in the area.
  - 2000 Working Population is total working population living or working in the county
  - 2000 Commuting Workers is total working population commuting into and out of the county
  - % Commuting is % of the total commuting working population that commutes into or out of the county.
- E6 data (expected growth patterns) is population growth projections to the year nearest the anticipated attainment date for the area provided by the Texas State Data Center, Emissions growth projections were developed by the Technical Analysis Division and are a projected tons per day rate based on the average ozone season weekday and they are projected to the earliest

potential attainment date for the specific area should it be designated as non-attainment.

- E7 (meteorology) - The meteorology factors are as follows:
  - Factor 1 = (Harris, Brazoria, Galveston, Jefferson) Proximity to coast results in flow reversals which recirculate polluted air parcels. Incoming sea breeze front in afternoon can compress pollutants in front of it. (10 - 20 days per year)
  - Factor 2D = Downwind of large industrial and urban source areas this percent.
    For each county, we combined all peak ozone season (April through October) afternoon (11:00 - 17:59 CST) hourly readings for resultant wind directions (with corresponding resultant wind speeds of 10 miles per hour or less) from TCEQ and local program monitors operating from 1999 through 2002, and calculated the percent of winds falling into each of 12 wind direction bins (0 to 30 deg. = NNE, 30 to 60 deg. = NE, etc.). We compared these fractions with the geometric positioning of suburban and exurbia counties to the urban counties in each MSA/CMSA to estimate the approximate percent of time that each less-urban county was downwind of the urban county or counties.
    Scale: Low<10%, Medium 10-20%, High>20%.
  - Factor 2U = Percent of time a county is upwind of any part of the most urban county in the area using afternoon (11:00 CST - 17:59 CST) hourly data from April-October, 1999-2002, wind speeds (resultant) <= 10mph. Scale: Low<33%, Medium 34-55%, High ≥ 56%.
  - Factor 3 = Frequent light winds and sunny skies under high pressure domes in summer.
  - Factor 4 = Occasional (10 - 20 days per year) effects of pollution transport from Upper Gulf Coast when high pressure center is to the east.
  - Factor 5 = Occasional (10 - 20 days per year) effects of pollution transport from Midwestern-Southeastern regions when high pressure center is in central U.S. ("Continental air")
  - Factor 6 = (El Paso) Frequent inversions trap primary pollutants close to the ground until late in the morning, allowing more time for photochemistry to produce ozone.
  - Factor 7= (El Paso) Differential heating and cooling along the river cause flow reversals to recirculate polluted air along the river valley.
- E8 (geography) is a brief description of potential air quality impacts based on location and geography of the county
- E9 (jurisdictional boundaries) are county boundaries
- E10 (Emissions control) are identified in more detail in the attached tables and the specific control item legend is located on the following page
- E11 (Regional reductions) are identified in more detail in the attached tables and the specific control item legend is located on the following page

05/11/2004 THU 16:54 FAX 2146657263 USEPA R6 MULTIMEDIA 004/044

E10 Emission Controls Legend

IM1 or IM2 - Vehicle Inspection/Maintenance with ASM, OBD and LIRAP. The number indicate the phase of implementation

SL - Speed Limit Reduction

IDL - Vehicle Idling Restrictions

S2 - Stage II Vapor Recovery

VMEP - Voluntary Mobile Emissions Reduction Program

TCM - Transportation Control Measures

GSE - Airport Agreement Reductions/ Ground Support Equipment Electrification

TERP - Texas Emissions Reduction Plan

SDE - Stationary Diesel Engines

L&G - Small, Spark-Ignition Engine Operating Restrictions/ Lawn & Garden Rule

NOx - Point source NOx Reductions

B&T - Emissions Bank and Trade Program

HRVOC - Highly Reactive VOC's

IM-TSI - Vehicle I&M with 2-speed idle and OBD without LIRAP

RVP - Clean Gasoline

EAST, SW & TXU - Control measures at Texas Eastman, SWEPCO and TXU as part of Northeast Texas FAR

O3FLEX - Control measures under Ozone Flex Plan Agreements

VERP - ALCOA's voluntary emissions reduction plan

ALCOA - Reductions from ALCOA enforcement action/settlement; under negotiation.

E11 Regional Reductions Legend

CK(%) - Cement Kiln NOx limits with % reductions

EASTNOx - Electric Generating Facilities subject to NOx Emission Rules for boilers & gas turbines

Eastern Texas Regionwide - Includes the following in all areas EXCEPT EL PASO, but not listed in the table due to broad applicability:

- Texas Low Emission Diesel
- Stage 1 Vapor Recovery
- HB2914 - Grandfathered Pipeline Facilities (50% NOx reduction, may require up to 20% in west Texas)

Statewide - Includes the following, but are not listed in the table due to statewide applicability:

- Cement Kiln NOx limits (CK)
  - 27% reduction Statewide (50% Ellis County only) by 2004
- Gas-fired Water Heaters, Small Boilers, and Process Heaters
  - Effective beginning 2002 on all new installations
- California Spark-Ignition Engines (effective 2004 model year)
- Low RVP "Clean" Gasoline
  - 7.8 psi (except El Paso) effective May- October
- Legislation
  - SB5 - TERP
    - In Non-attainment and near-nonattainment areas only
    - Contingent upon program funding
    - Exact NOx reductions depend on specific local uses of grants
      - Goal of 18.90 tpd in HGA + 20 tpd for gap
      - Goal of 16.3 in tpd DFW
  - SB7 - Electric Utility Deregulation
    - By May 2003 permit & 50% NOx reduction from 1997 levels
    - Cap & Trade system statewide
  - SB766 - VERP & MPP for Grand fathered Facilities
  - HB2912 - Grandfathered Permitting Requirements
    - Permit or cease operation by 2003
    - 10 year BACT by 2007 (2008 if small business)

8-hour Ozone Designation EPA's Exclusion Criteria Table

Dallas/Fort Worth 1-hour Ozone Nonattainment Area and CMSA

County	Nox-TPD (%) (E1)	VOC-TPD (%) (E1)	Population (%) (E2)	8hr DV (E3)	Source Location (%) (E4)	2000 VMT/% (E5)	2010 VMT / % Change (E5)	2010 VMT % Total (E5)
Dallas	349 (41.2)	269 (384.)	2,218,899(42.4)	90	108(39.9)	65,721,032/44.3	83,383,695/26.9	42.7
Tarrant	225 (26.6)	177 (25.3)	1,446,219(27.7)	100	87(32.1)	41,254,510/27.8	56,120,941/36.0	28.8
Ellis	51 (6.0)	32 (4.6)	111,360(2.1)	82	14(5.2)	4,161,857/2.8	5,260,034/26.4	2.7
Collin	62 (7.3)	44 (6.3)	491,675(9.4)	88	15(5.5)	11,191,486/7.5	15,813,760/41.3	8.1
Denton	54 (6.3)	43 (6.1)	432,976(8.3)	97	14(5.2)	9,865,355/6.6	14,265,701/44.6	7.3
Hood	28 (3.3)	9 (1.2)	41,100(0.8)	84	02(0.7)	889,386/0.6	1,176,516/32.3	0.6
Johnson	18 (2.1)	20 (2.8)	126,811(2.4)	90	04(1.5)	3,060,528/2.1	3,883,010/26.9	2.0
Parker	14 (1.7)	21 (3.0)	88,495(1.7)	89	09(3.3)	2,905,215/2.0	3,745,446/28.9	1.9
Henderson	15 (1.8)	19 (2.7)	73,277(1.5)	no data	10(3.7)	1,769,049/1.2	2,176,652/23.0	1.1
Kaufman	14 (1.7)	28 (4.0)	71,313(1.4)	73	06(2.2)	3,506,272/2.4	4,625,480/31.9	2.4
Hunt	11 (1.9)	25 (3.8)	76,596(1.5)	no data	02(0.7)	2,646,452/1.8	2,850,040/7.6	1.5
Rockwall	6 (0.7)	13 (1.8)	43,080(0.8)	81	-0-(0)	1,404,142/0.9	1,809,735/28.9	0.9
Totals	**847 (100)**	**700 (100)**	**5,221,801(100)**		**271(100)**	**148,375,284**	**195,111,009/31.5**	**100**

8-hour Ozone Designation EPA's Exclusion Criteria Table

Dallas/Fort Worth 1-hour Ozone Nonattainment Area and CMSA - Continued

County	2000 Working Population (%) (E5)	2000 Commuting Workers (E5)	% Commuting (E5)	Population Growth-2010/%+ (%) (E6)	Emissions Growth-NOx-TPD 2010/% Change (%) (E6)	Emissions Growth-VOC-TPD 2010/% Change (%) (E6)
Dallas	1,490,658(45.3)	585,279	17.8	2,579,566/16.2(40.9)	195 /-44.1(33.9)	155 /-42.4 (36.9)
Tarrant	841,692(25.6)	307,538	9.3	1,674,540/15.8(26.6)	143 /-36.4 (24.9)	114 /-35.6 (27.1)
Ellis	62,783(1.9)	37,330	1.1	136,882/22.9(2.2)	58 /+13.8(10.1)	21 /-34.4 (5.0)
Collin	343,762(10.4)	215,491	6.5	672,405/36.8(10.7)	44 /-29.0(7.7)	28 /-36.4 (6.6)
Denton	273,147(8.3)	169,549	5.1	608,207/40.5(9.6)	31 /-42.6(5.4)	31 /-27.9(7.4)
Hood	20,215(0.6)	10,446	0.3	49,468/20.3(0.7)	20 /-28.6 (3.5)	4 /-55.5 (1.0)
Johnson	66,170(2.0)	41,427	1.3	153,784/21.3(2.4)	19 /+5.5 (3.3)	12 /-40.0 (2.9)
Parker	48,218(1.5)	31,544	1.0	106,624/20.5(1.7)	18 /+28.6(3.1)	9 /-57.1 (2.1)
Henderson	32,155(1.0)	16,309	0.5	85,950/17.3(1.4)	14 /-6.6(2.4)	12 /-36.8 (2.9)
Kaufman	42,855(1.3)	28,874	0.9	90,416/26.8(1.4)	22 /+57.1(3.8)	17 /-39.3 (4.0)
Hunt	41,004(1.2)	19,943	0.6	92,237/20.4(1.5)	7 /-36.4(2.3)	13 /-48.0 (3.1)
Rockwall	28,258(0.9)	21,063	0.6	56,336/30.8(0.9)	4 /-33.3(0.7)	4 /-69.2 (1.0)
Totals	**3,290,918(100)**	**1,484,784**	**45.1**	**6,306,415/20.8(100)**	**575 /-32.1(100)**	**420 /-40.0 (100)**

8-hour Ozone Designation EPA's Exclusion Criteria Table

Dallas/Fort Worth 1-hour Ozone Nonattainment Area and CMSA - Continued

County	Meteorology (E7)	Geography (E8)	Boundaries (E9)	Emission Controls (E10)	Regional Reductions (E11)
Dallas	Factors 3, 4 & 5	No significant effect.	County	IM1, SL, S2, VMEP, TCM, GSE, TERP, NOx	All Regional and statewide measures
Tarrant	Factors 3, 4 & 5	No significant effect.	County	IM1, SL,S2, VMEP, TCM, GSE, TERP, NOx	All Regional and statewide measures
Ellis	Factors 2D(8%)L, 2U(58%)H, 3, 4 & 5	No significant effect.	County	IM2, SL, TERP, CK50	All Regional and statewide measures
Collin	Factors 2D(71%)H, 3, 4 & 5	No significant effect.	County	IM2, SL, S2, VMEP, TCM, TERP, NOx	All Regional and statewide measures
Denton	Factors 2D(74%)H, 3, 4 & 5	No significant effect.	County	IM1, SL, S2, VMEP, TCM, TERP, NOx	All Regional and statewide measures
Hood	Factors 2D(19%)M, 2U(11%)L, 3, 4 & 5	No significant effect.	County	TERP	All Regional and statewide measures
Johnson	Factors 2D(13%)M, 2U(55%)M, 3, 4 & 5	No significant effect.	County	IM2, SL, TERP	All Regional and statewide measures
Parker	Factors 2D(18%)M,2U(20%)L, 3, 4 & 5	No significant effect.	County	IM2, SL, TERP	All Regional and statewide measures
Henderson	Factors 2D(2%)L, 2U(31%)M, 3, 4 & 5	No significant effect.	County	TERP	All Regional and statewide measures
Kaufman	Factors 2D(6%)L, 2U(61%)H, 3, 4 & 5	No significant effect.	County	IM2, SL, TERP	All Regional and statewide measures
Hunt	Factors 2D(8%)L, 2U(25%)L, 3, 4 & 5	No significant effect.	County	TERP	All Regional and statewide measures
Rockwall	Factors 2D(7%)L, 2U(53%)M, 3, 4 & 5	No significant effect	County	IM2, SL, TERP	All Regional and statewide measures

8-hour Ozone Designation EPA's Exclusion Criteria Table

San Antonio MSA

County	Nox-TPD (%) (E1)	VOC-TPD (%) (E1)	Population (%)(E2)	8hr DV (E3)	Source Location (%) (E4)	2000 VMT/% (E5)	2007 VMT /% Change (E5)	2007 VMT % Total (E5)
Bexar	235 (83.6)	199 (82.9)	1,392,931(87.5)	89	43(75.4)	35,951,128/84.7	43,595,087/21.2	84.2
Comal	24 (8.5)	14 (5.8)	78,021(4.9)	Incomplete data	07(12.3)	3,008,684/7.1	3,831,663/27.3	7.4
Guadalupe	18 (6.4)	22 (9.2)	89,023(5.6)	Incomplete data	07(12.3)	2,733,878/6.4	3,433,412/25.6	6.6
Wilson	4 (1.4)	5 (2.1)	32,408(2.0)	No Monitor	-0-(0)	759,319/1.8	947,508/24.8	1.8
MSA Totals	**281 (100)**	**240 (100)**	**1,592,383(100)**		**57(100)**	**42,453,009**	**51,807,670/22.0**	**100**

8-hour Ozone Designation EPA's Exclusion Criteria Table

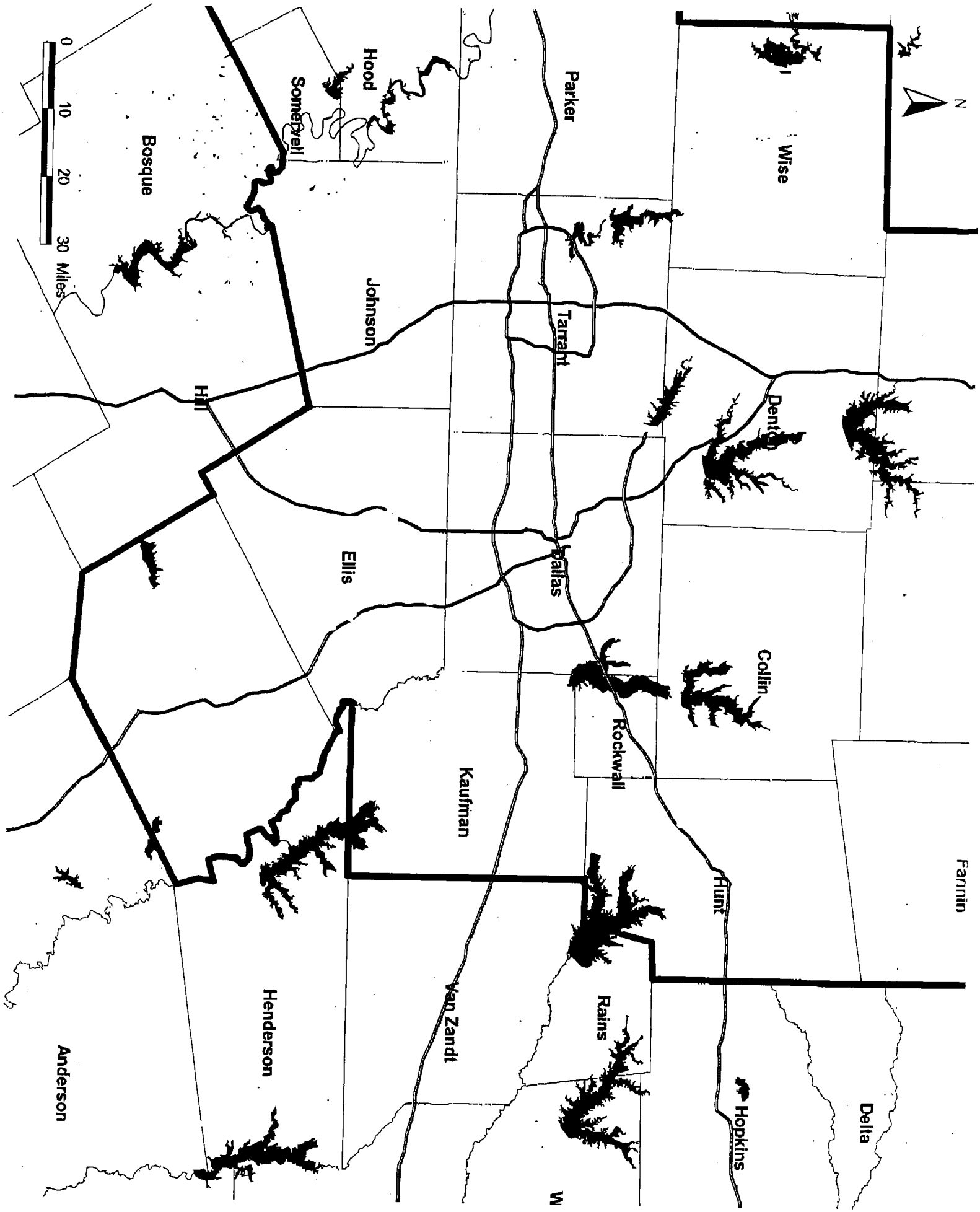
San Antonio MSA - Continued

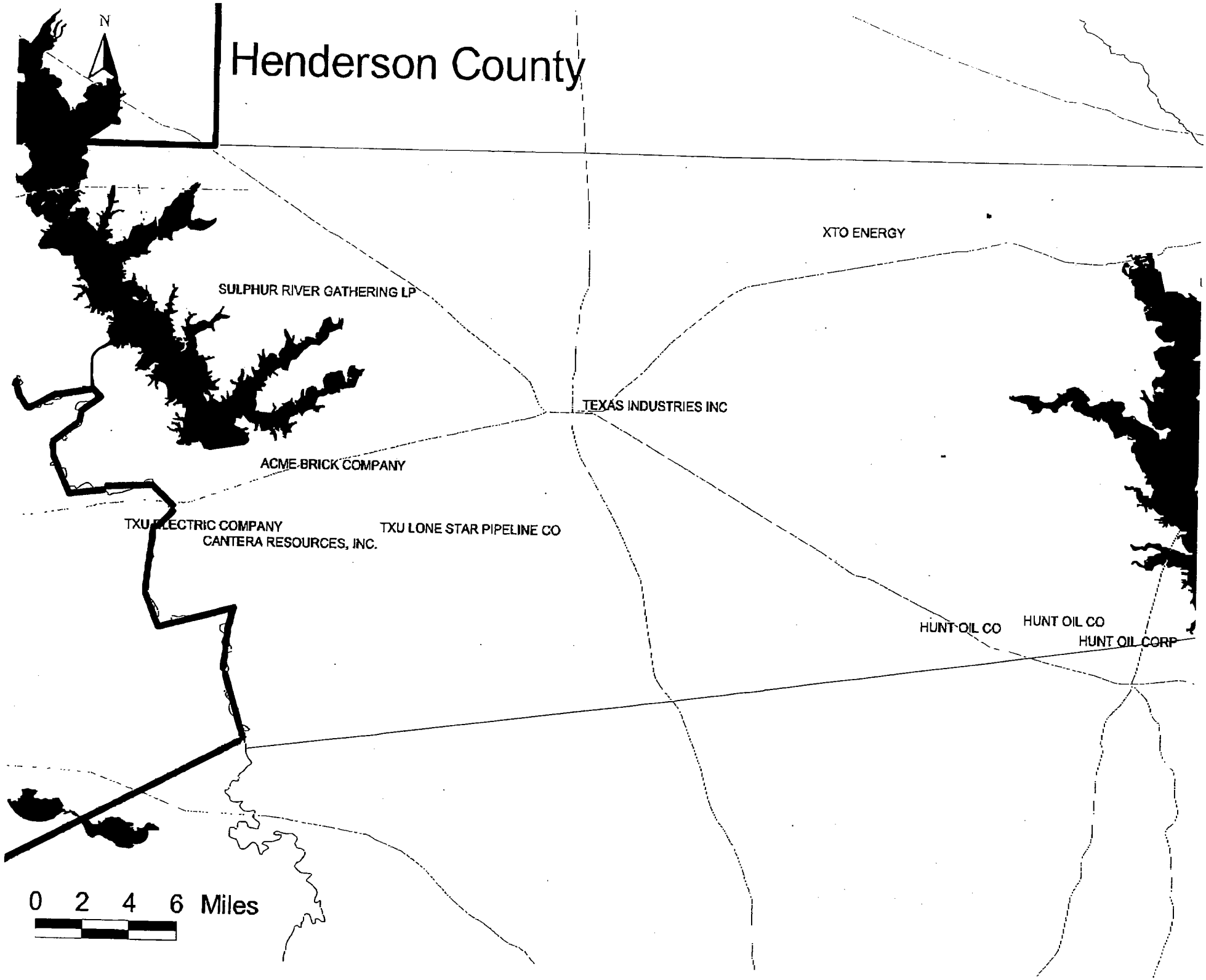
County	2000 Working Population (%) (E5)	2000 Commuting Workers (E5)	% Commute (E5)	Population Growth-2005/%+ (%) (E6)	Emissions Growth-NOx-TPD 2007/% Change (%) (E6)	Emissions Growth-VOC-TPD 2007/% Change (%) (E6)
Bexar	674,277(85.7)	92,481	11.7	1,487,221/6.8(86.9)	163 /-29.8 (80.7)	149 /-25.1 (81.0)
Comal	48,276(6.1)	28,845	3.7	88,543/13.5(5.2)	21 /-12.5 (10.4)	12 /-14.3 (6.5)
Guadalupe	49,549(6.3)	32,203	4.1	98,811/11.0(5.8)	15 /-16.7(7.4)	18 /-18.2 (9.8)
Wilson	15,057(1.9)	10,521	1.3	36,677/13.2(2.1)	3 /-25.0(1.5)	5 /0.0 (2.7)
MSA Totals	**787,159(100)**	**164,050**	**20.8**	**1,711,252/7.5(100)**	**202 /-28.1(100)**	**184 /-23.3 (100)**

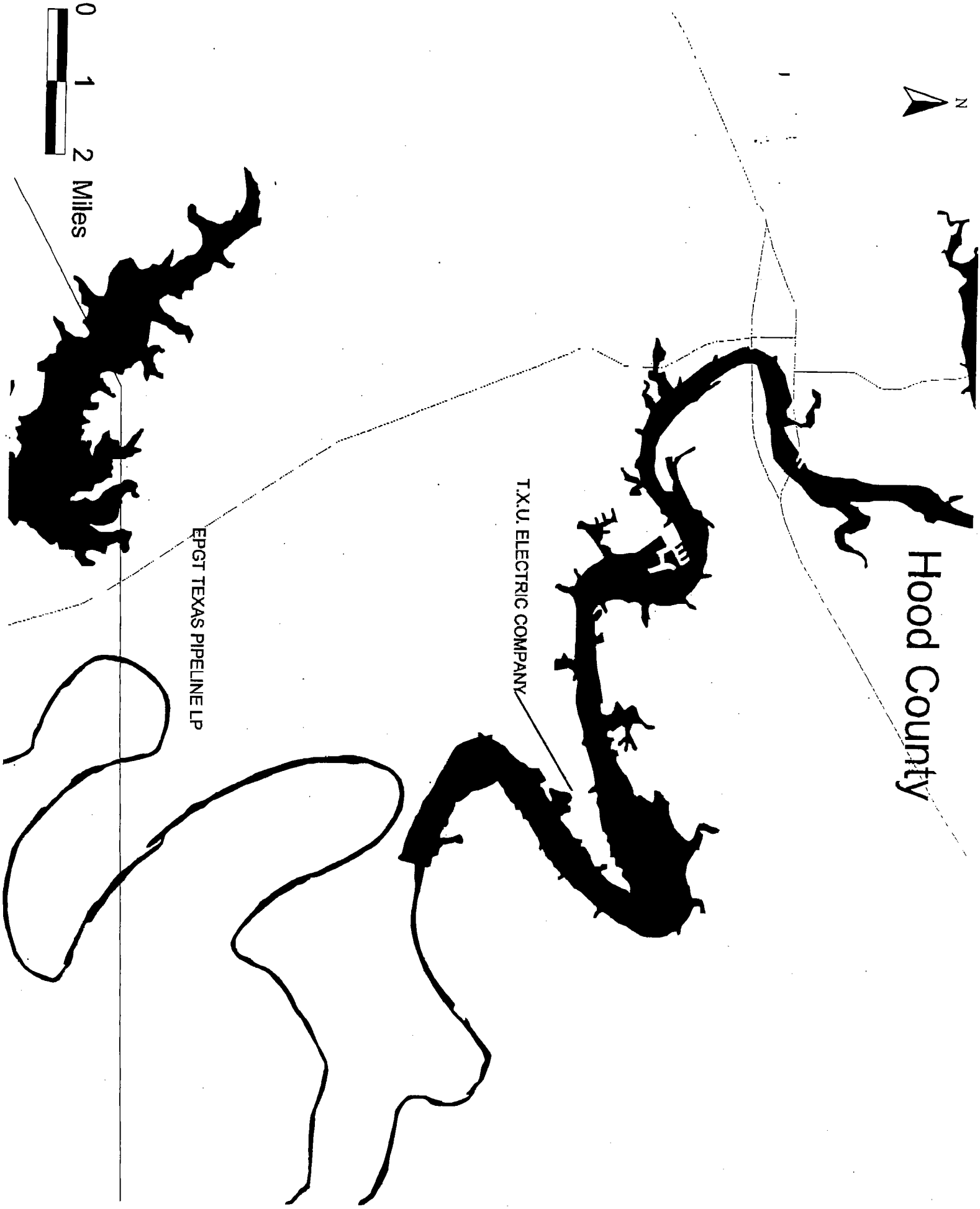
8-hour Ozone Designation EPA's Exclusion Criteria Table

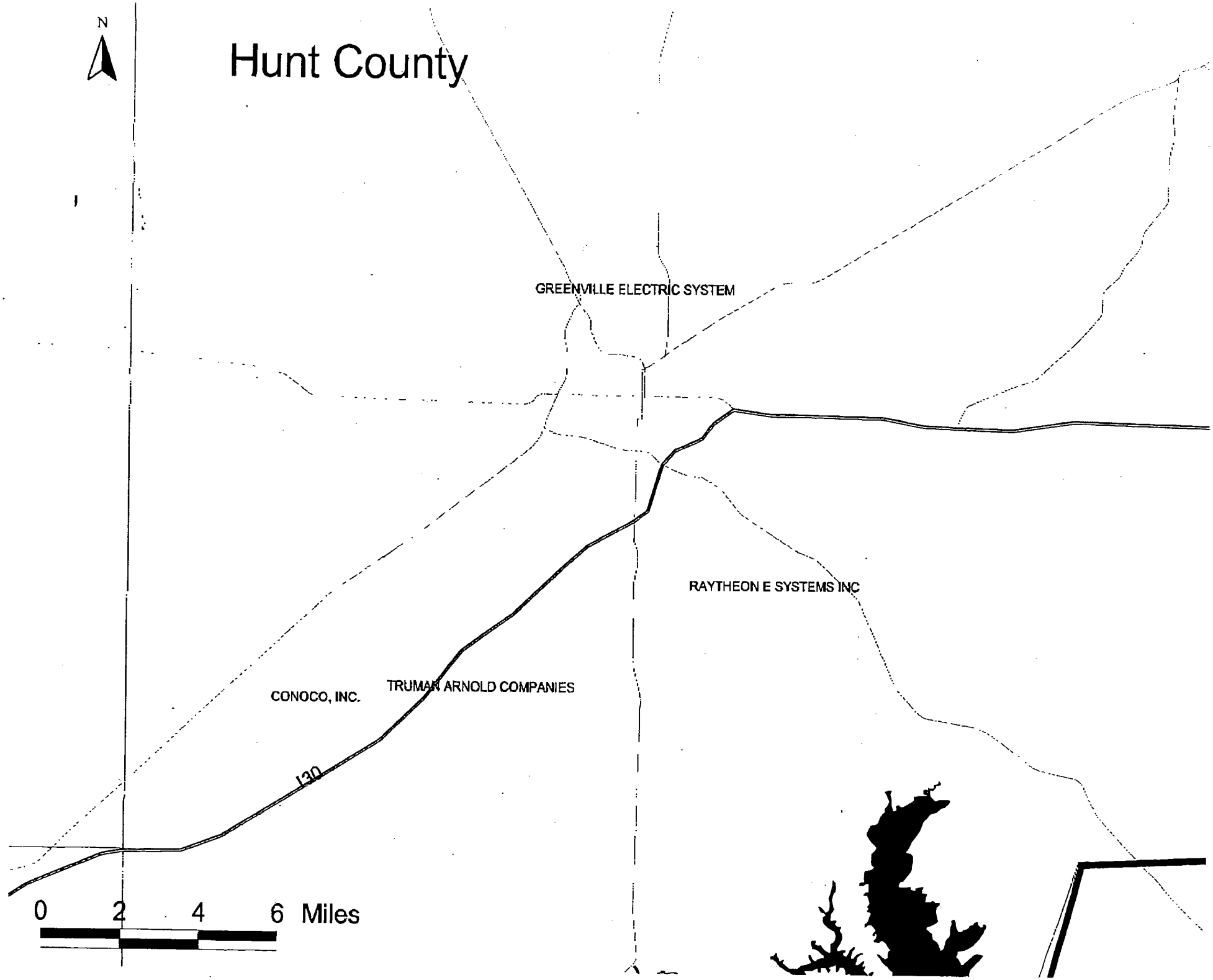
San Antonio MSA - Continued

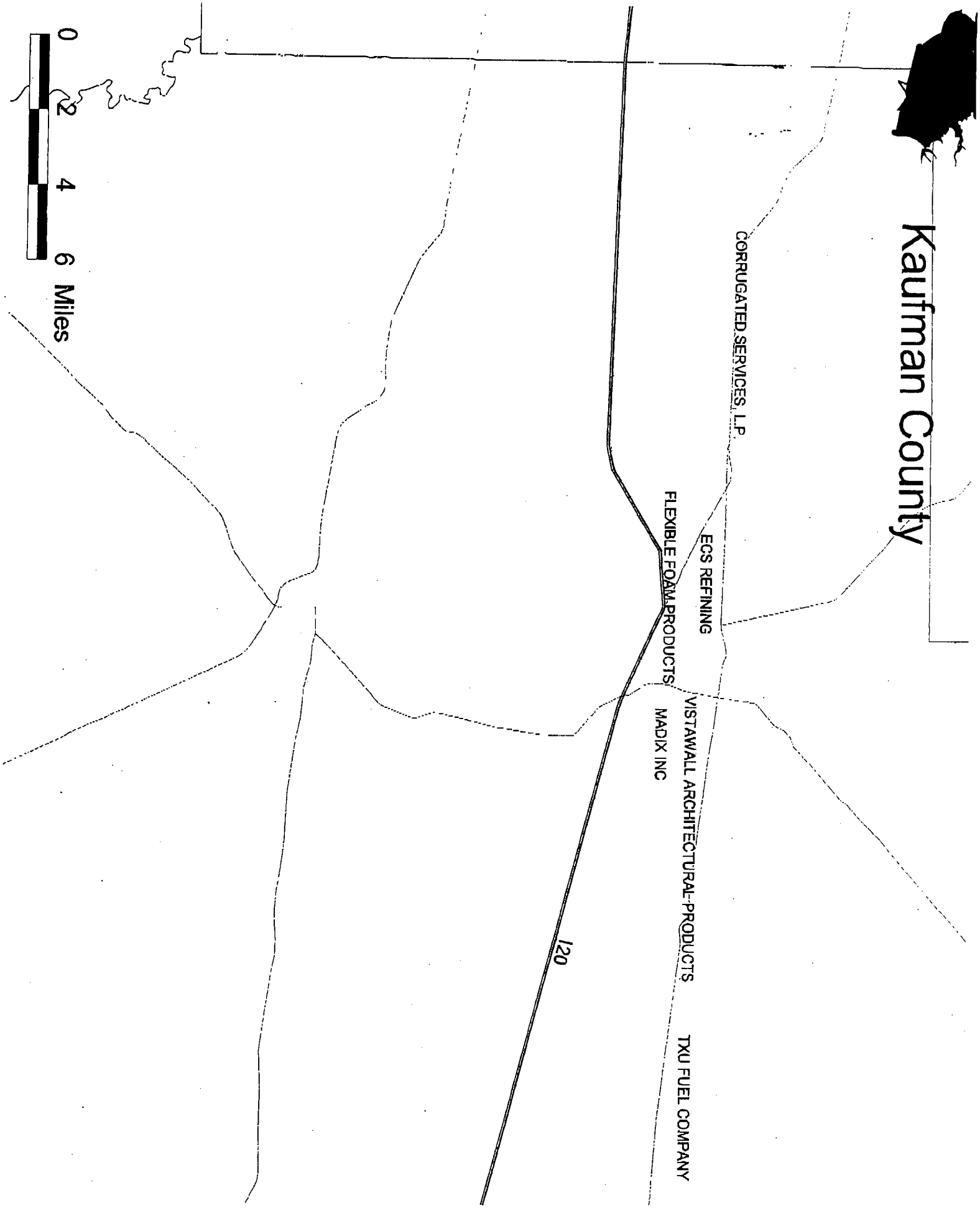
County	Meteor-ology (E7)	Geo-graphy (E8)	Boun-daries (E9)	Emission Controls (E10)	Regional Reductions (E11)	Other
Bexar	Factors 3, 4 & 5	Proximity to the Edwards Uplift to the west causes occasional flow reversals.	County		EASTNOx, CK27, TERP	EAC
Comal	Factors 2D(11%)M, 2U(36%)M,3, 4 & 5	Proximity to the Edwards Uplift to the west causes occasional flow reversals.	County		EASTNox, CK27, TERP	EAC
Guadalupe	Factors 2D(4%)L, 2U(60%)H, 3, 4 & 5	Proximity to the Edwards Uplift to the west causes occasional flow reversals.	County		TERP	EAC
Wilson	Facrors 2D(2%)L, 2U(83%)H, 3, 4 & 5	No significant effect.	County		TERP	EAC
MSA Totals						

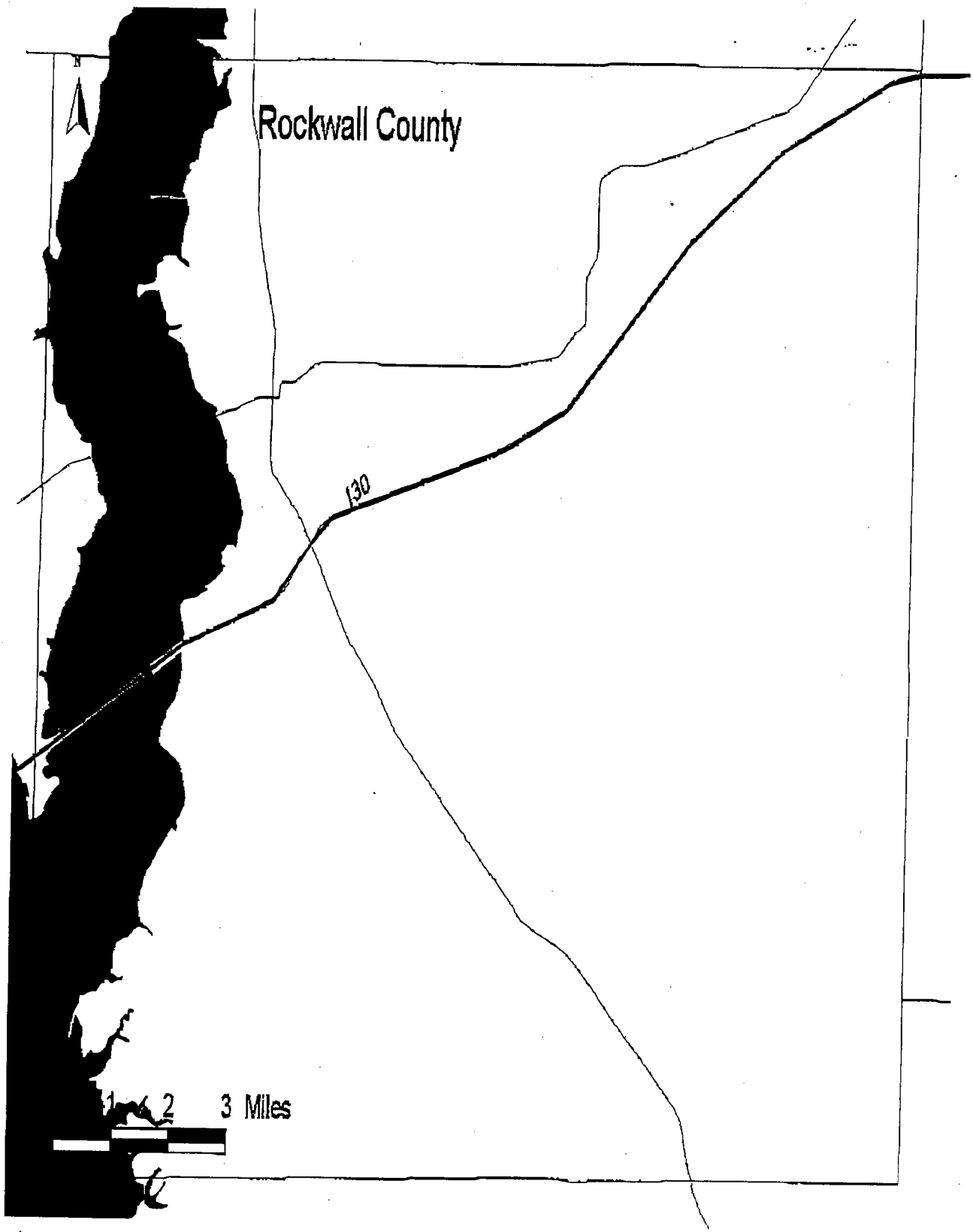

N
Wise
Parker
Hood
Somervell
Bosque
Johnson
Tarrant
Denton
Hill
Ellis
Dallas
Collin
Rockwall
Kaufman
Fannin
Hunt
Van Zandt
Rains
Hopkins
Delta
Henderson
Anderson
0
10
20
30 Miles

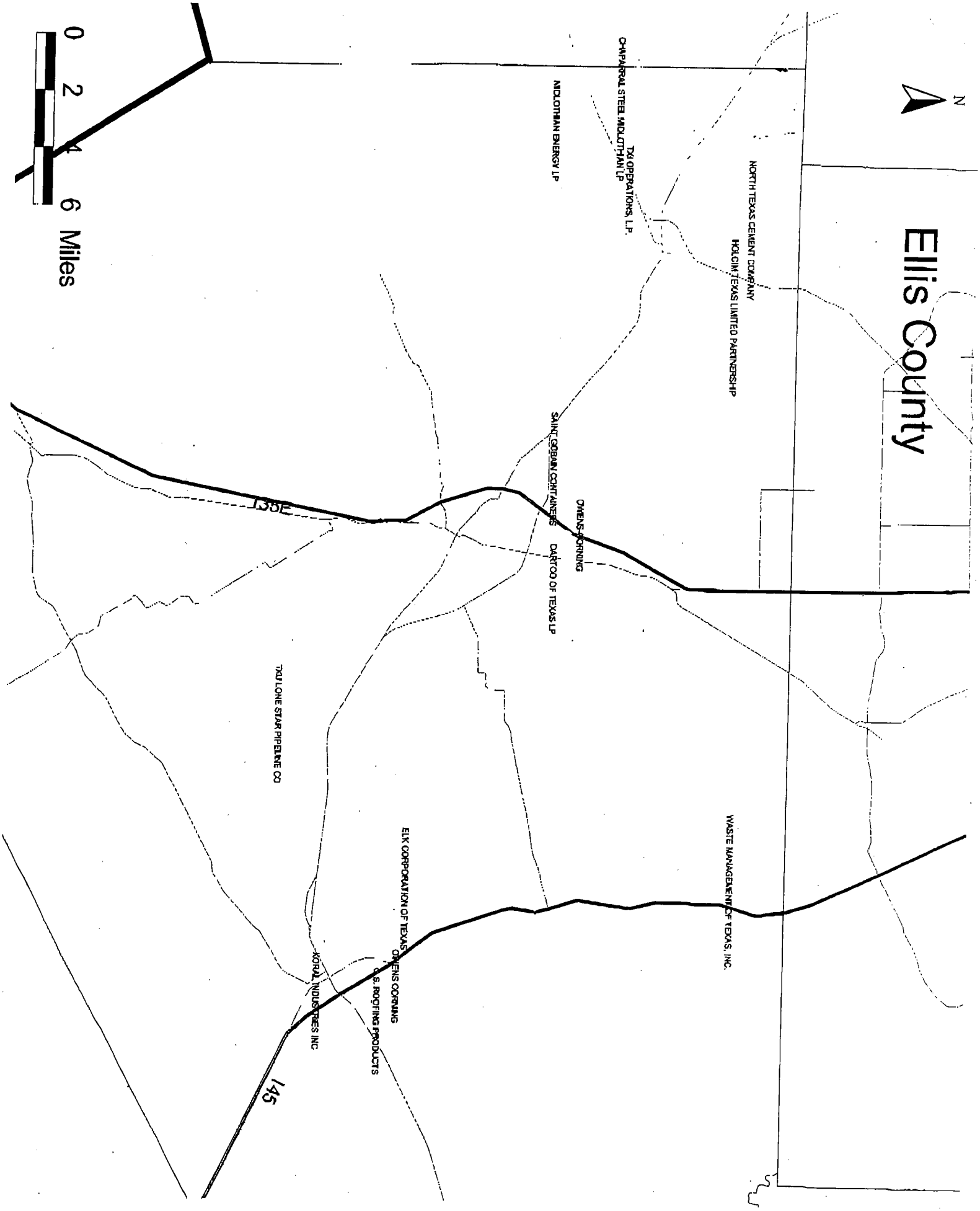

Henderson County
N
XTO ENERGY
SULPHUR RIVER GATHERING LP
TEXAS INDUSTRIES INC
ACME BRICK COMPANY
TXU ELECTRIC COMPANY
CANTERA RESOURCES, INC.
TXU LONE STAR PIPELINE CO
HUNT OIL CO
HUNT OIL CO
HUNT OIL CORP
0 2 4 6 Miles

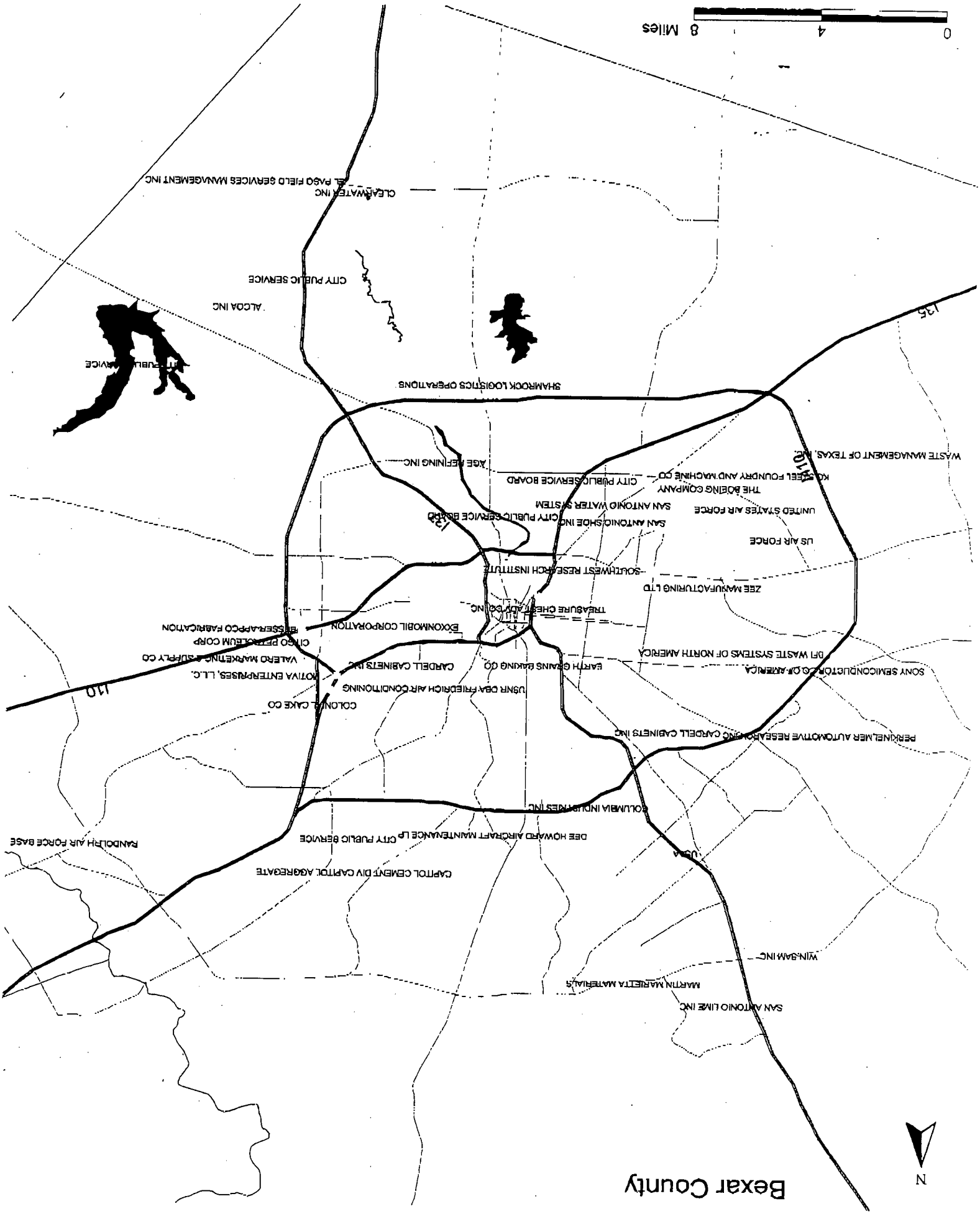

Hood County
N
T.X.U. ELECTRIC COMPANY
EPGT TEXAS PIPELINE LP
0
1
2
Miles

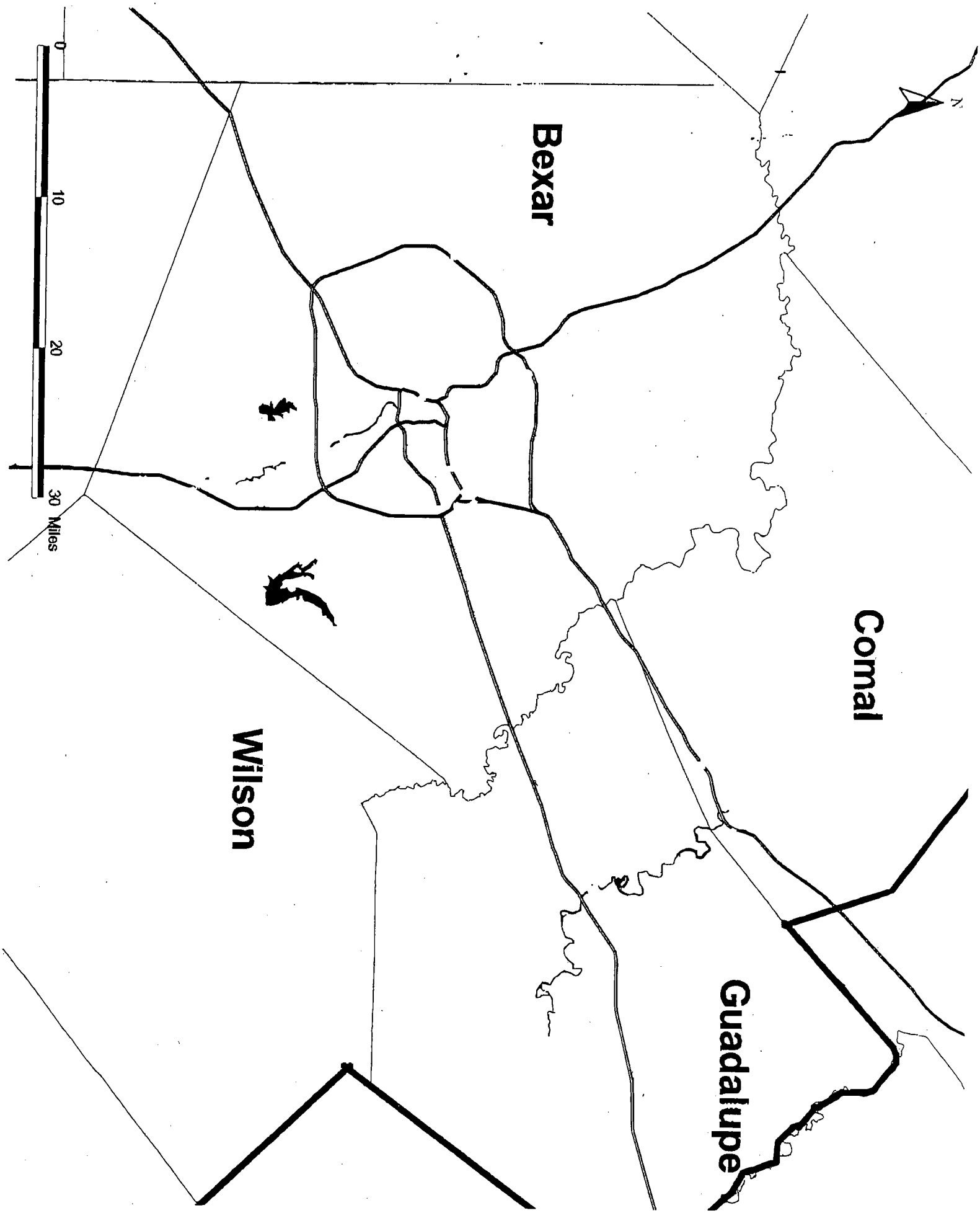

N
Hunt County
GREENVILLE ELECTRIC SYSTEM
RAYTHEON E SYSTEMS INC
TRUMAN ARNOLD COMPANIES
CONOCO, INC.
I30
0 2 4 6 Miles

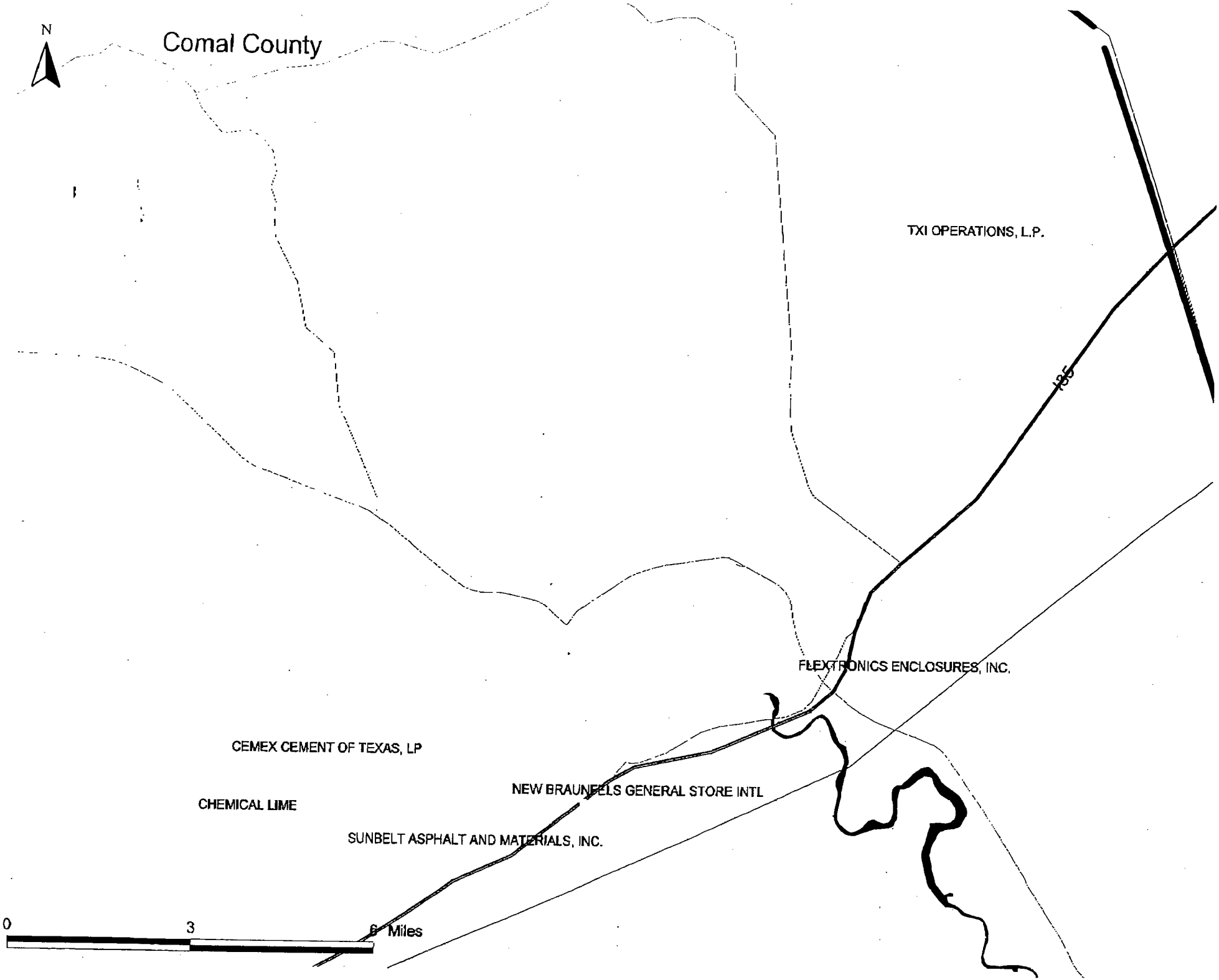

Kaufman County
CORRUGATED SERVICES, L.P.
ECS REFINING
FLEXIBLE FOAM PRODUCTS
VISTAWALL ARCHITECTURAL PRODUCTS
MADIX INC
TXU FUEL COMPANY
120
0 2 4 6 Miles

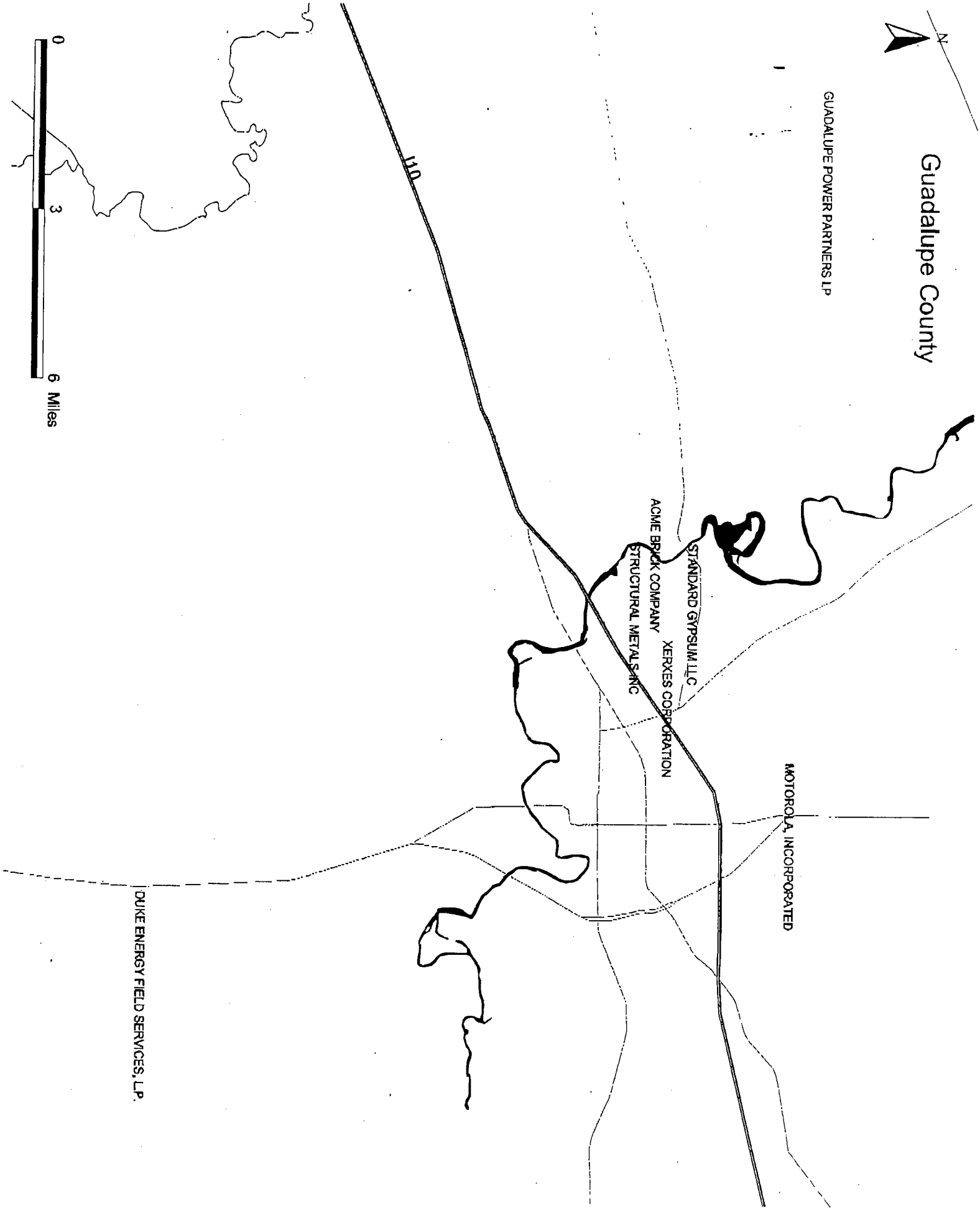

N
Rockwall County
130
1 2 3 Miles

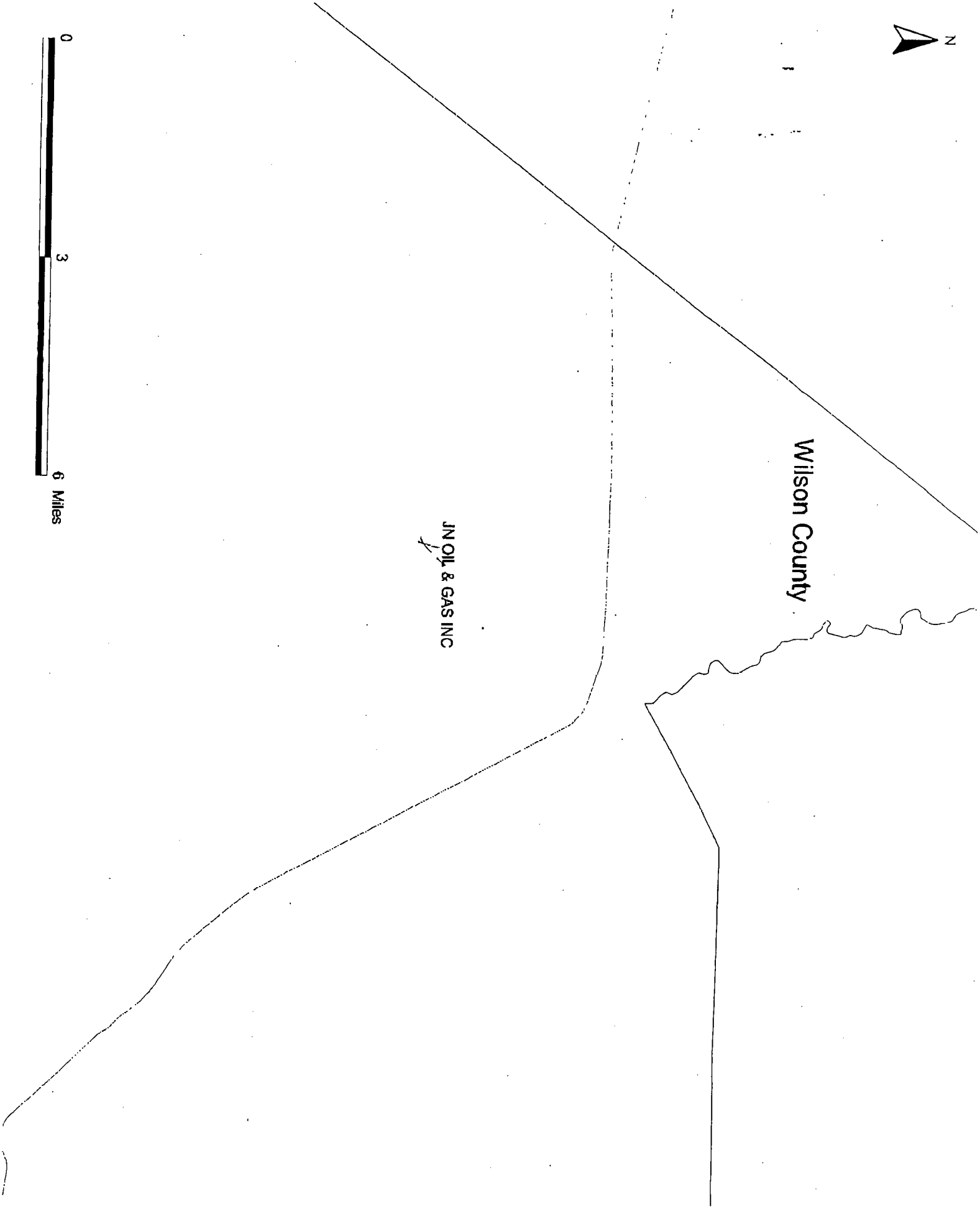

Ellis County
N
0 2 4 6 Miles
NORTH TEXAS CEMENT COMPANY
HOLCIM TEXAS LIMITED PARTNERSHIP
CHAPARRAL STEEL MIDLOTHIAN LP
TXI OPERATIONS, L.P.
MIDLOTHIAN ENERGY LP
SAINT GOBAIN CONTAINERS
OWENS-CORNING
DARTCO OF TEXAS LP
135E
TAU LONE STAR PIPELINE CO
ELK CORPORATION OF TEXAS
OWENS CORNING
C.S. ROOFING PRODUCTS
KORAL INDUSTRIES INC
WASTE MANAGEMENT OF TEXAS, INC.
145


Bexar County
N
0
4
8 Miles
SAN ANTONIO LIME INC
MARTIN MARIETTA MATERIALS
WIN-SAM INC
CAPITOL CEMENT DIV CAPITOL AGGREGATE
RANDOLPH AIR FORCE BASE
CITY PUBLIC SERVICE
DEE HOWARD AIRCRAFT MAINTENANCE LP
COLUMBIA INDUSTRIES INC
PERKINELMER AUTOMOTIVE RESEARCH/INC CARDELL CABINETS INC
COLONIAL OAKS CO
USNR DBA FRIEDRICH AIR CONDITIONING
MOTIVA ENTERPRISES, L.L.C.
VALERO MARKETING & SUPPLY CO
CITGO PETROLEUM CORP
BESSEMER-APPCO FABRICATION
EXXONMOBIL CORPORATION
CARDELL CABINETS INC
EARTH GRAINS BAKING CO
SONY SEMICONDUCTOR CO OF AMERICA
DFI WASTE SYSTEMS OF NORTH AMERICA
TREASURE CHEST ADV CO INC
ZEE MANUFACTURING LTD
SOUTHWEST RESEARCH INSTITUTE
US AIR FORCE
SAN ANTONIO SHOE INC
CITY PUBLIC SERVICE BOARD
UNITED STATES AIR FORCE
SAN ANTONIO WATER SYSTEM
THE BOEING COMPANY
KOCH STEEL FOUNDRY AND MACHINE CO
CITY PUBLIC SERVICE BOARD
AGE REFINING INC
WASTE MANAGEMENT OF TEXAS, INC.
SHAMROCK LOGISTICS OPERATIONS
CITY PUBLIC SERVICE
ALCOA INC
CITY PUBLIC SERVICE
CLEARWATER INC
EL PASO FIELD SERVICES MANAGEMENT INC
USA
I-10
I-35
I-10


Bexar
Comal
Wilson
Guadalupe
0
10
20
30 Miles
N


N
Comal County
TXI OPERATIONS, L.P.
I35
FLEXTRONICS ENCLOSURES, INC.
CEMEX CEMENT OF TEXAS, LP
NEW BRAUNFELS GENERAL STORE INTL
CHEMICAL LIME
SUNBELT ASPHALT AND MATERIALS, INC.
0
3
6 Miles


Guadalupe County
GUADALUPE POWER PARTNERS LP
110
STANDARD GYPSUM LLC
XERXES CORPORATION
ACME BRICK COMPANY
STRUCTURAL METALS INC
MOTOROLA, INCORPORATED
DUKE ENERGY FIELD SERVICES, LP.
0
3
6 Miles

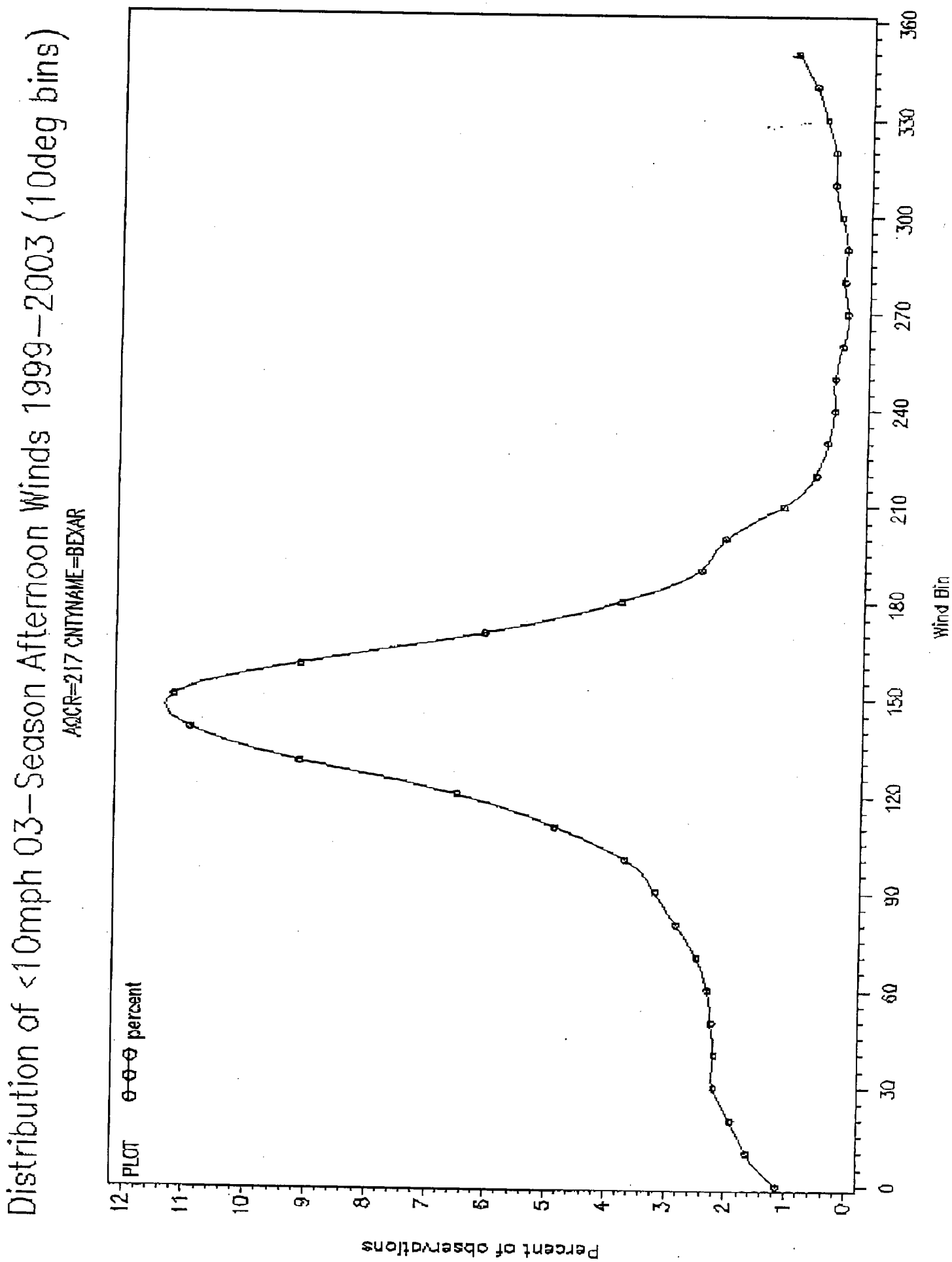

N
Wilson County
JN OIL & GAS INC
0
3
6 Miles

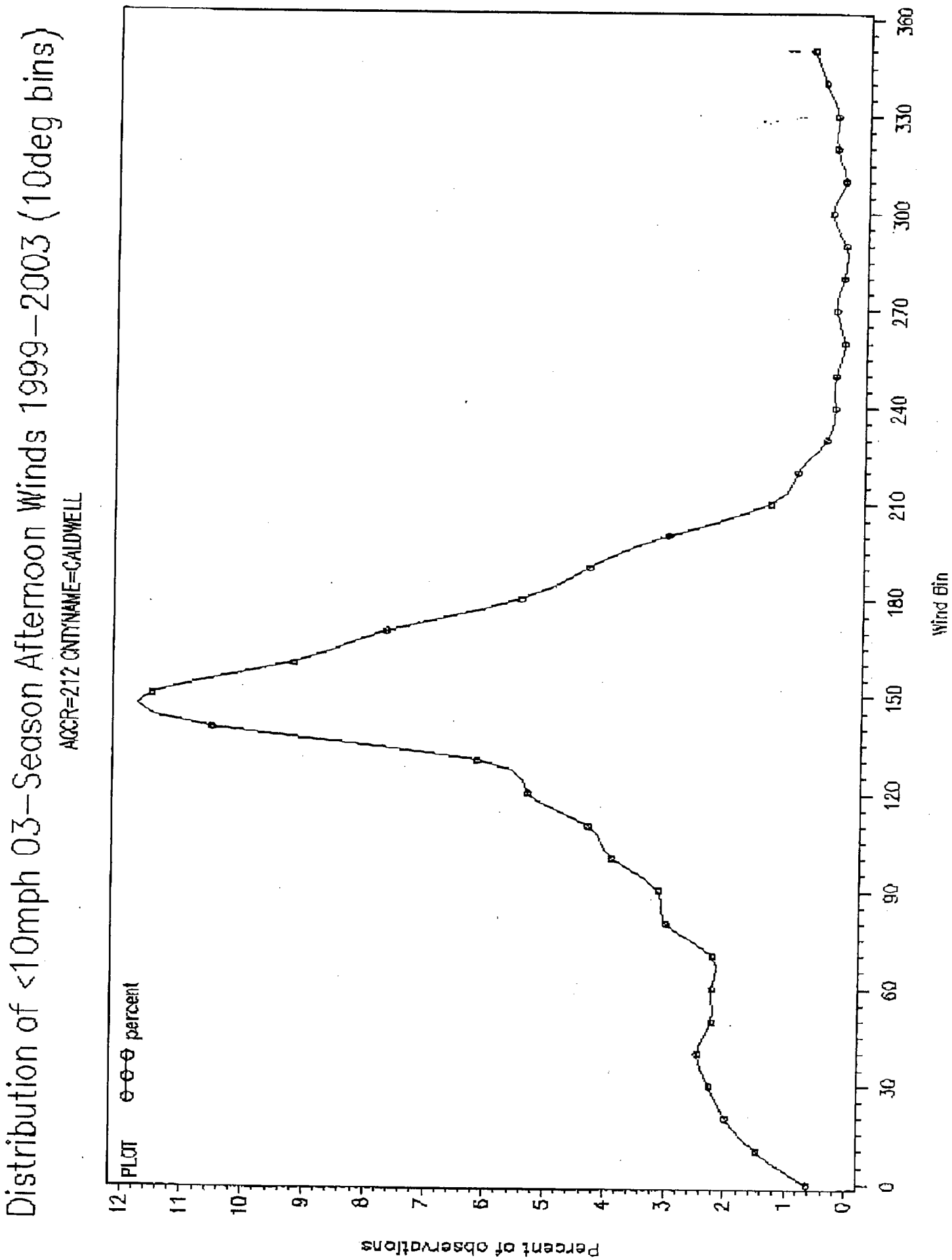
From: Dave Sullivan
To: Williams, Herb
Date: 1/16/04 2:48PM
Subject: Wind histograms in WPD format

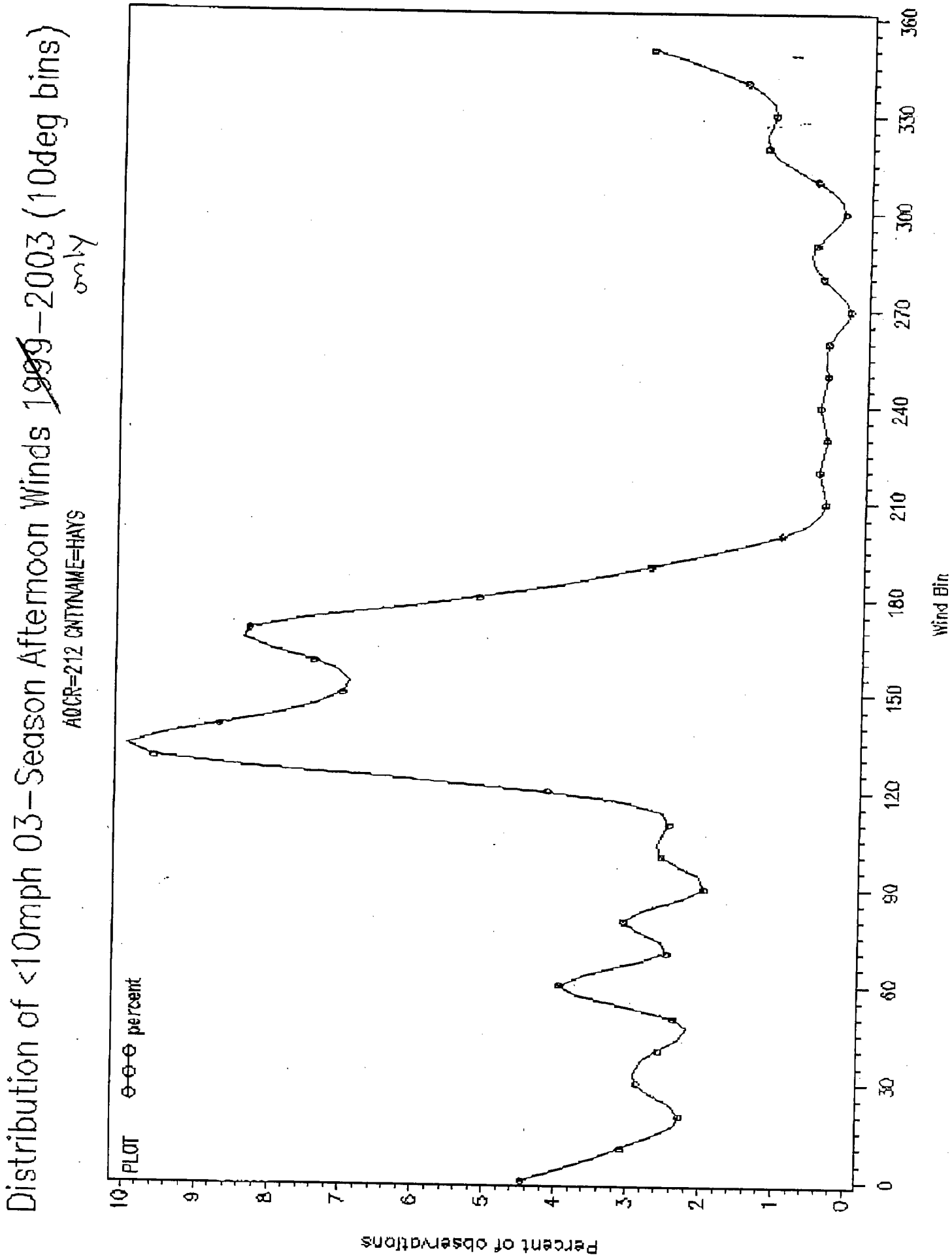
Histograms showing the relative frequency of surface winds at our CAMS whose data are in AQS from 1999-2003, for roughly ozone conducive conditions. These conditions are: resultant wind speed less than or equal to 10 miles per hour, for the hours beginning 11:00 standard time (12 noon daylight-savings time) - ending 17:59 standard time (6:59 PM daylight-savings time), during months April though October. Counties around San Antonio with monitoring data that are not in AQS are not included, but their results are very similar to the core urban county and the other nearby CenTex counties (Hays & Caldwell).

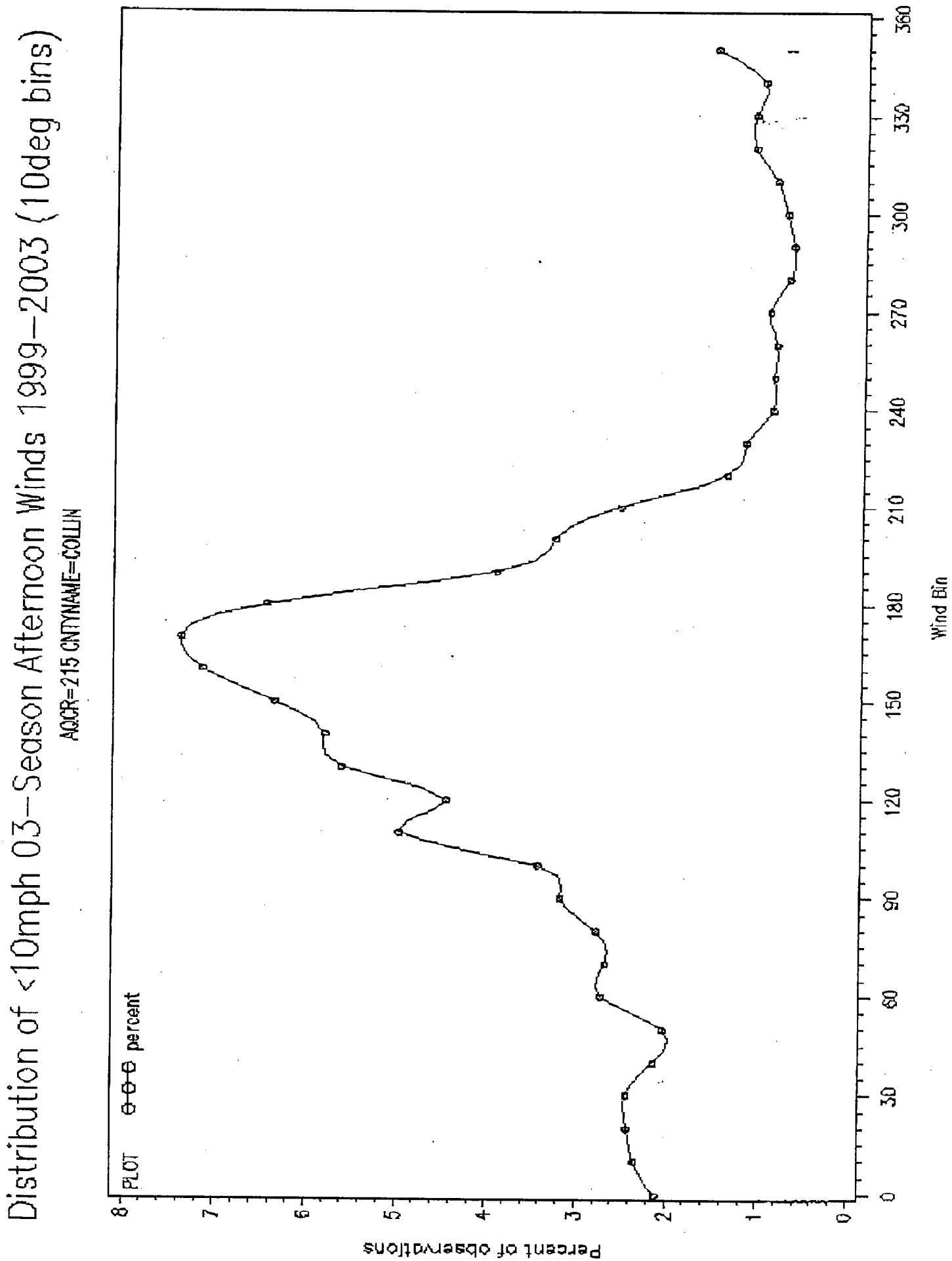
Dave Sullivan, Ph.D.
Manager, Monitoring Data Management & Analysis Section
Monitoring Operations Division
TCEQ
512-239-1624
dsulliva@tceq.state.tx.us

CC: Salem, Terry


Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AACR=217 CNTYNAME=BEXAR
PLOT
percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
9
10
11
12
30
60
90
120
150
180
210
240
270
300
330
360

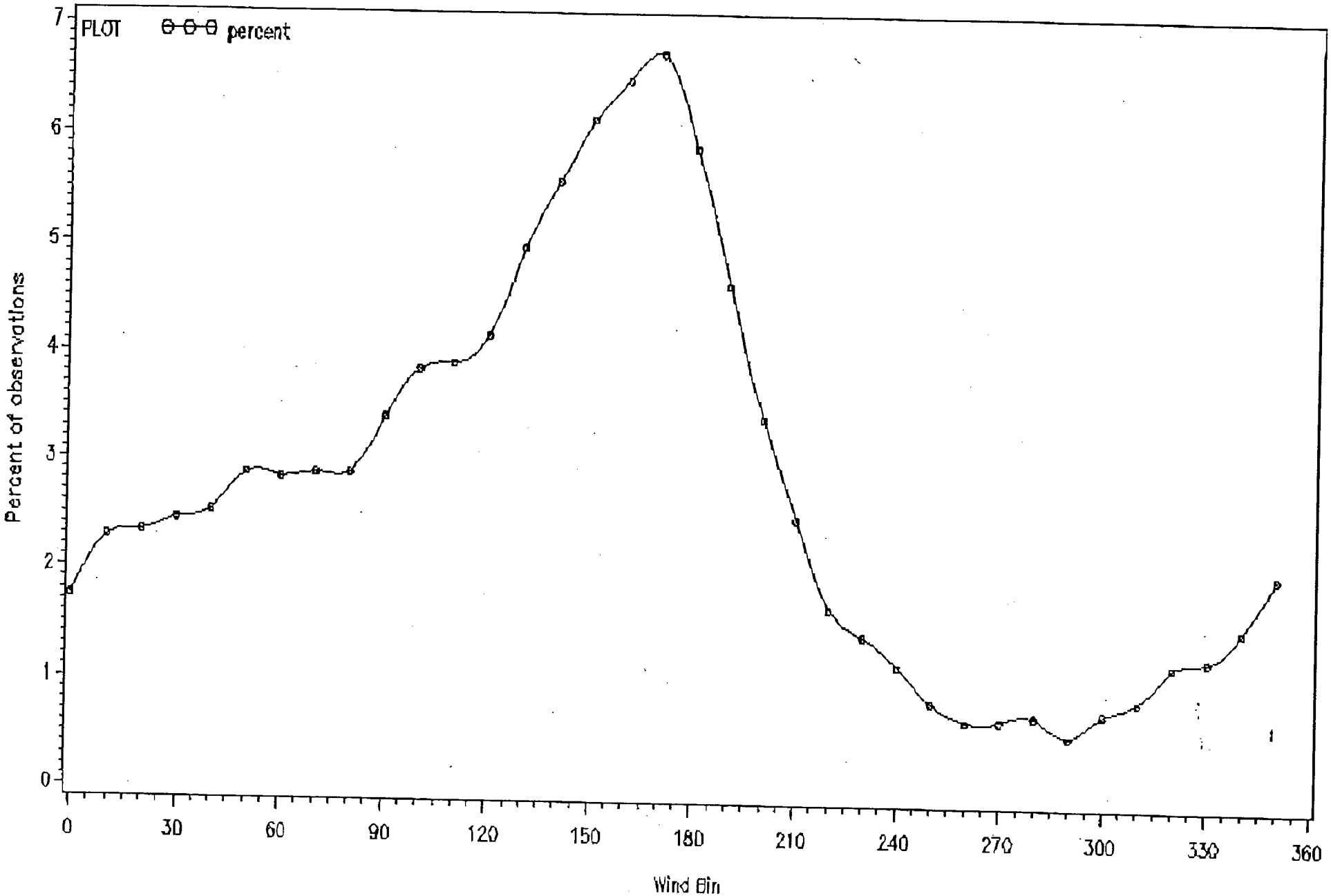

Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=212 CNTYNAME=CALDWELL
PLOT
percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
9
10
11
12
0
30
60
90
120
150
180
210
240
270
300
330
360


Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
only
AQCR=212 CNTYNAME=HAYS
PLOT percent
Percent of observations
Wind Bin
0
30
60
90
120
150
180
210
240
270
300
330
360
0
1
2
3
4
5
6
7
8
9
10

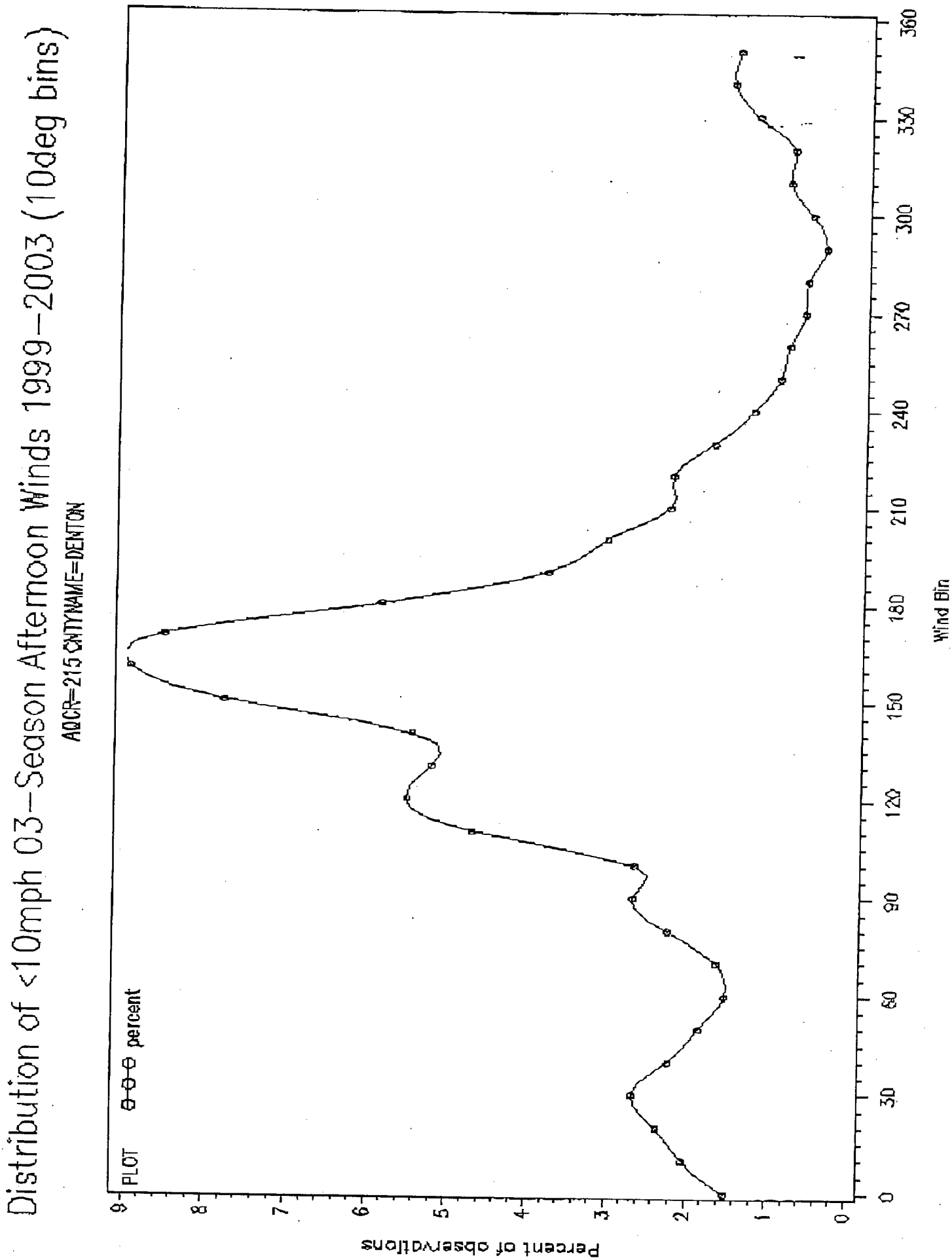

Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=COLLIN
PLOT percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
0
30
60
90
120
150
180
210
240
270
300
330
360

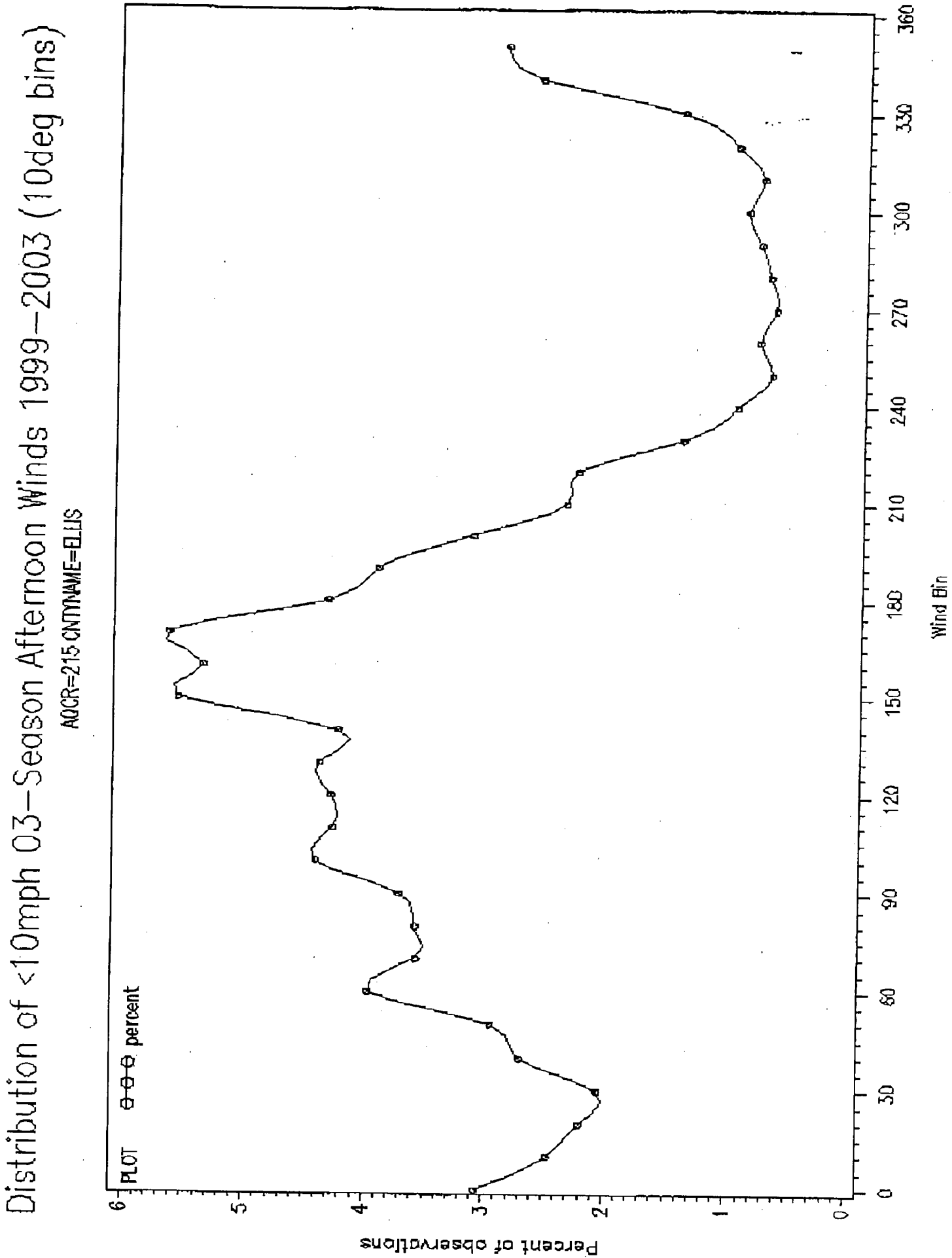
Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)

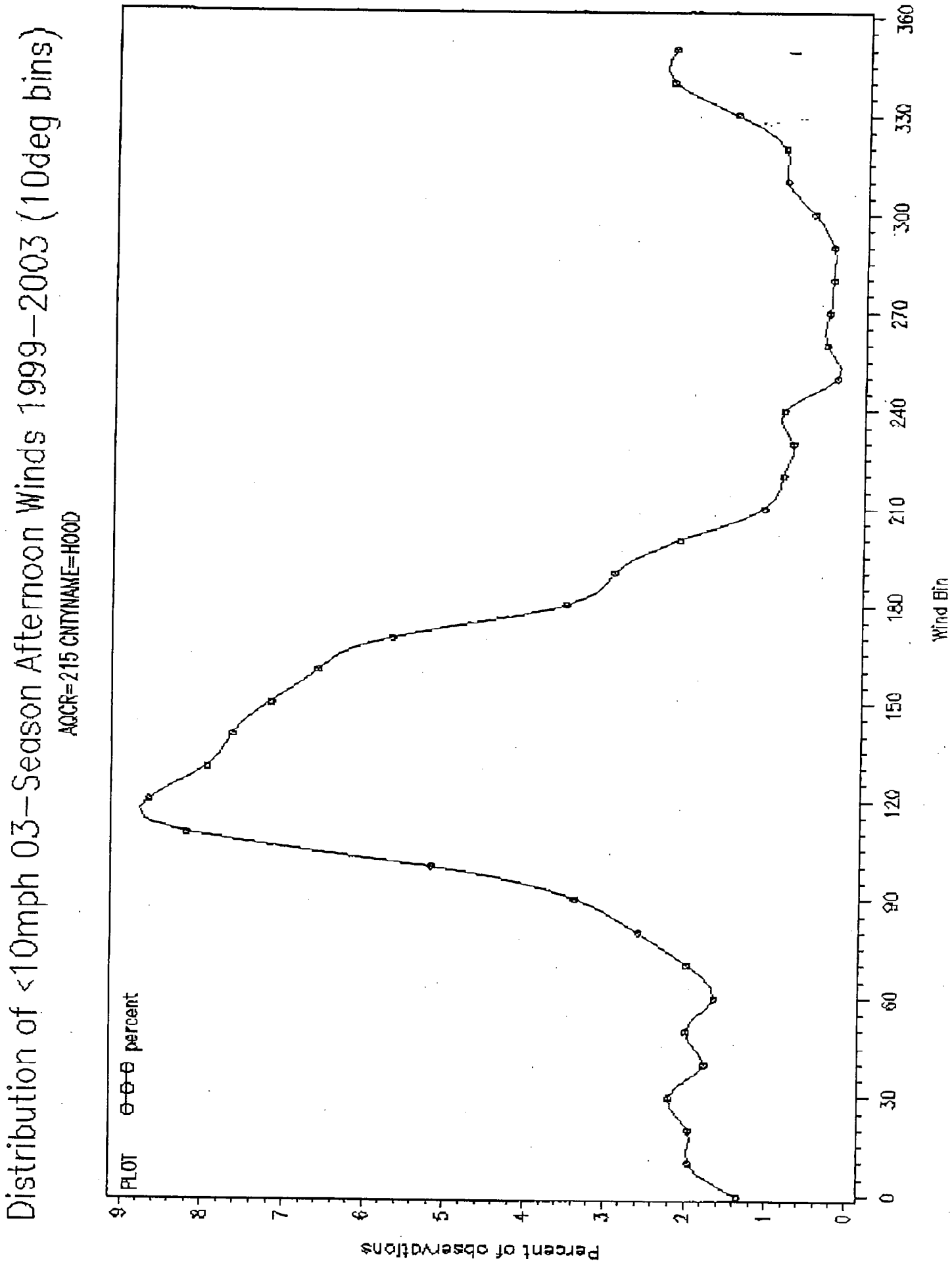
AQCR=215 CNTYNAME=DALLAS

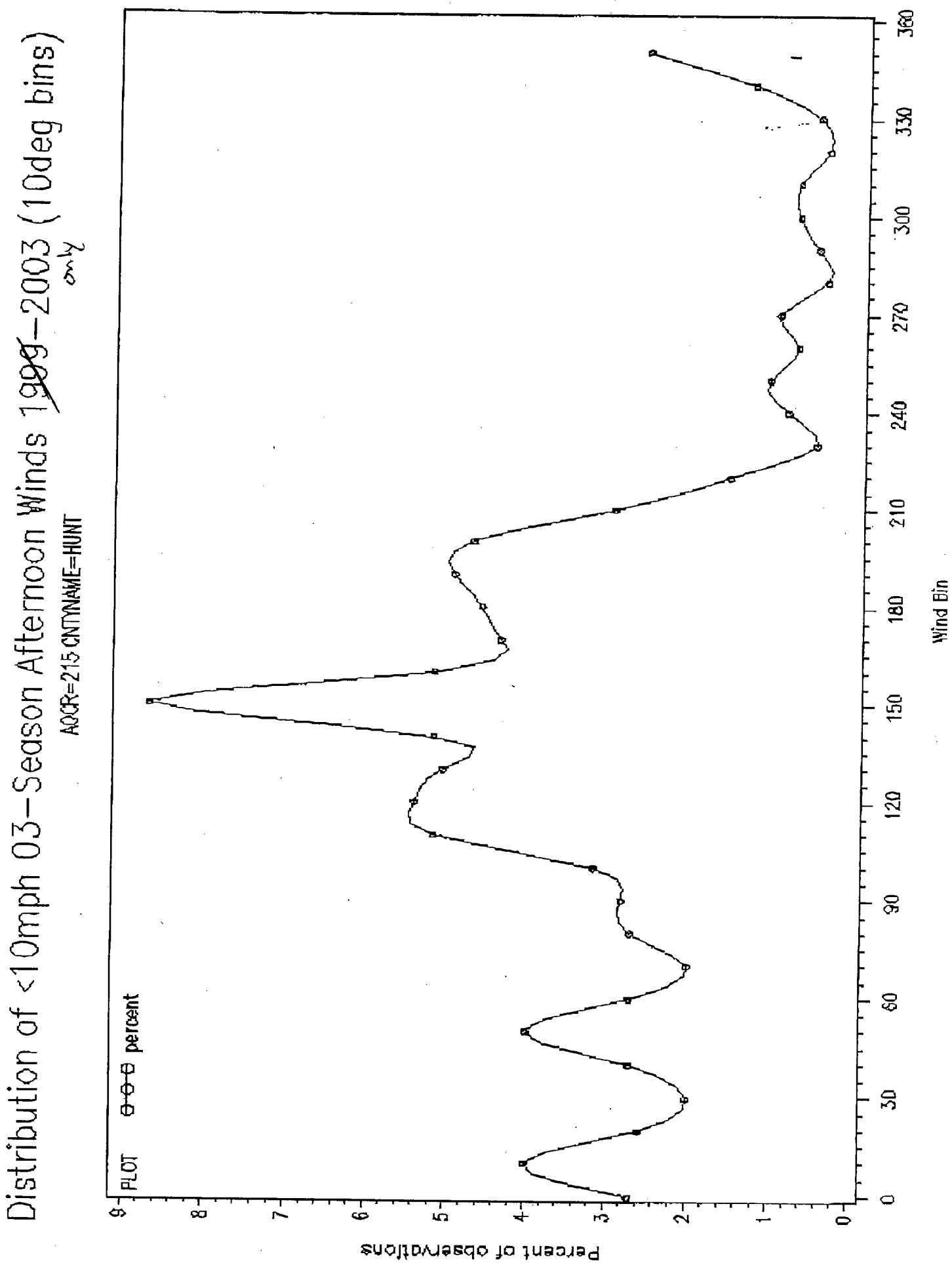


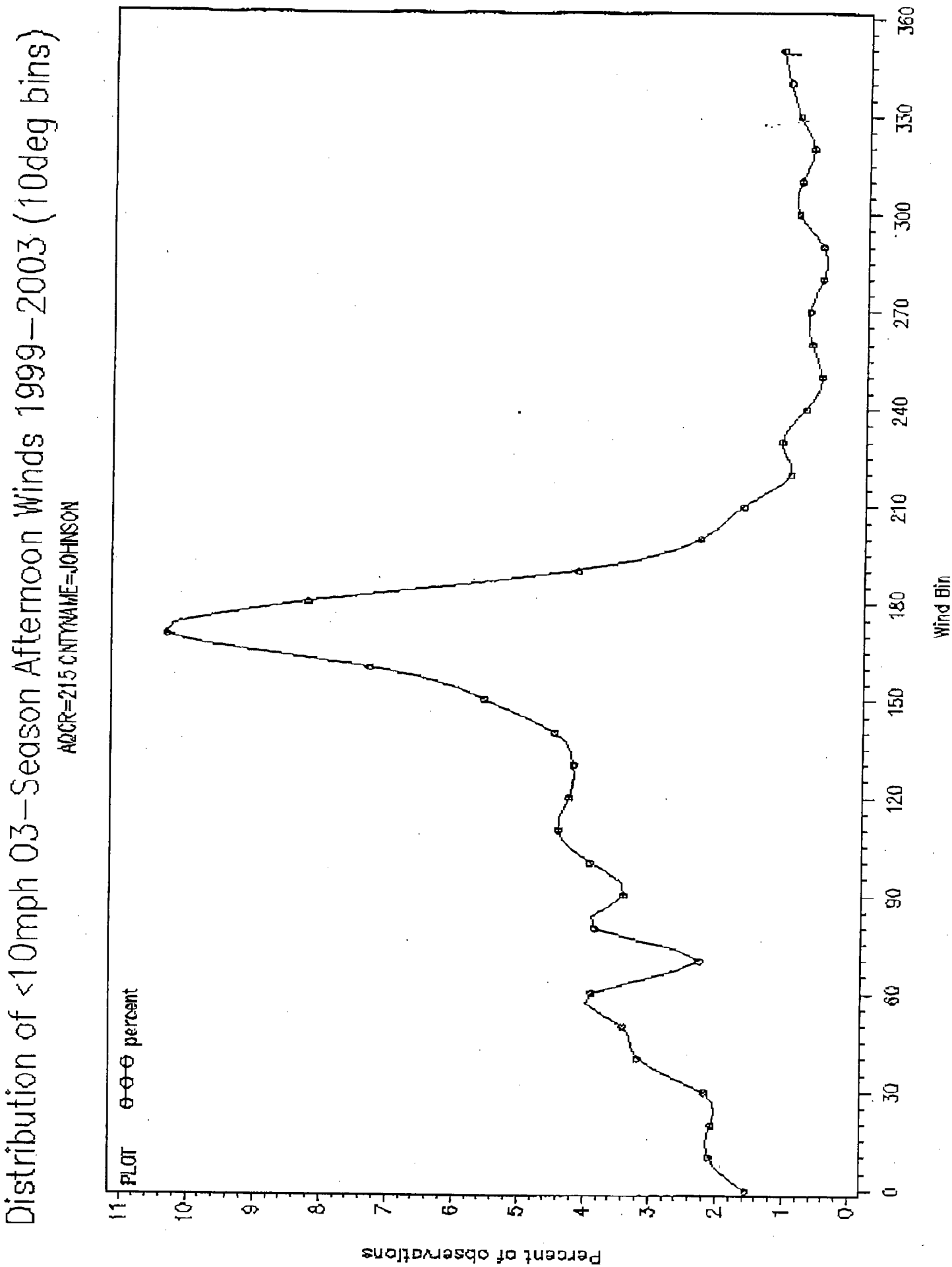
USEPA R6 MULTIMEDIA
029/044

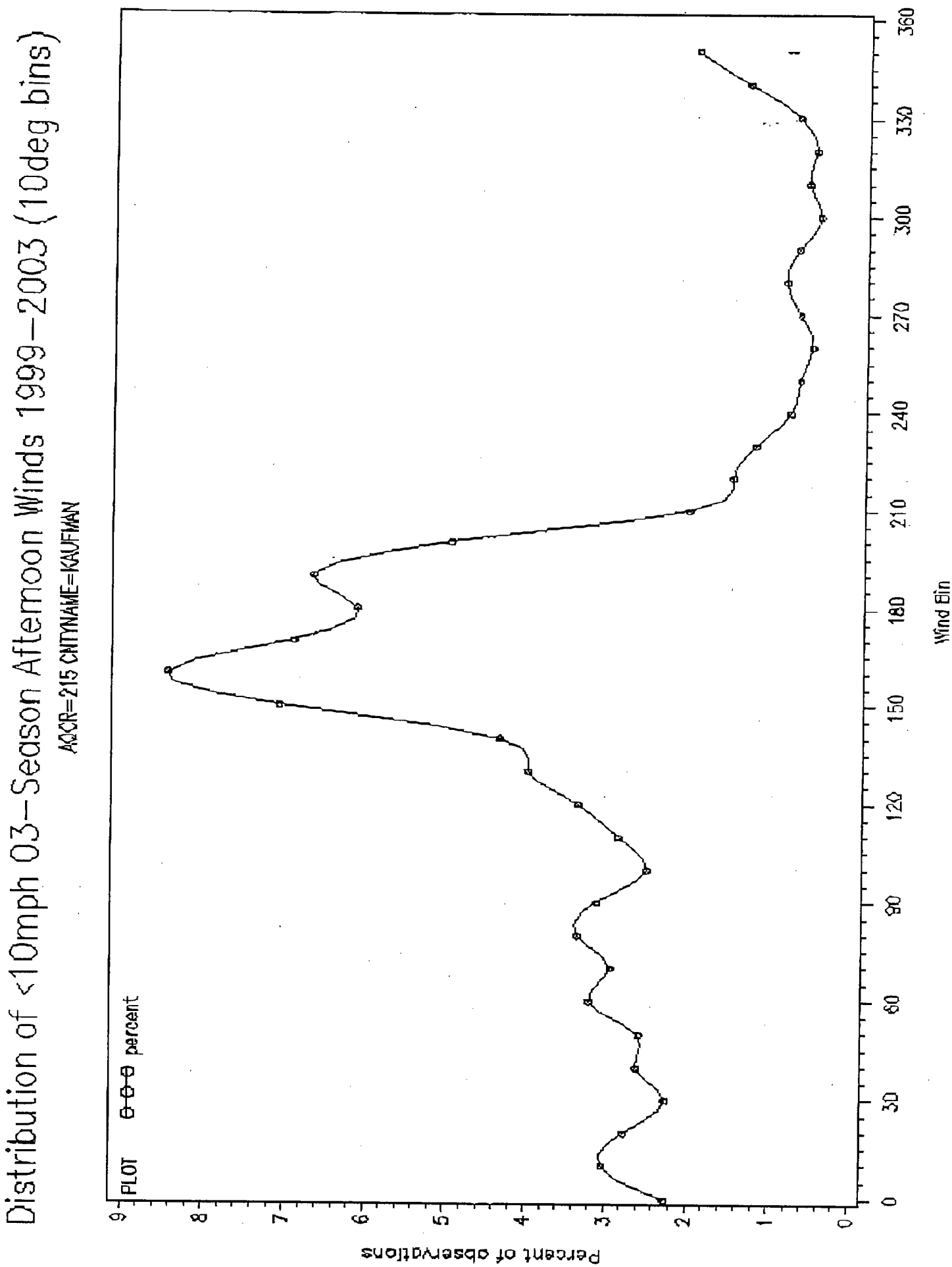

Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=DENTON
PLOT percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
9
0
30
60
90
120
150
180
210
240
270
300
330
360

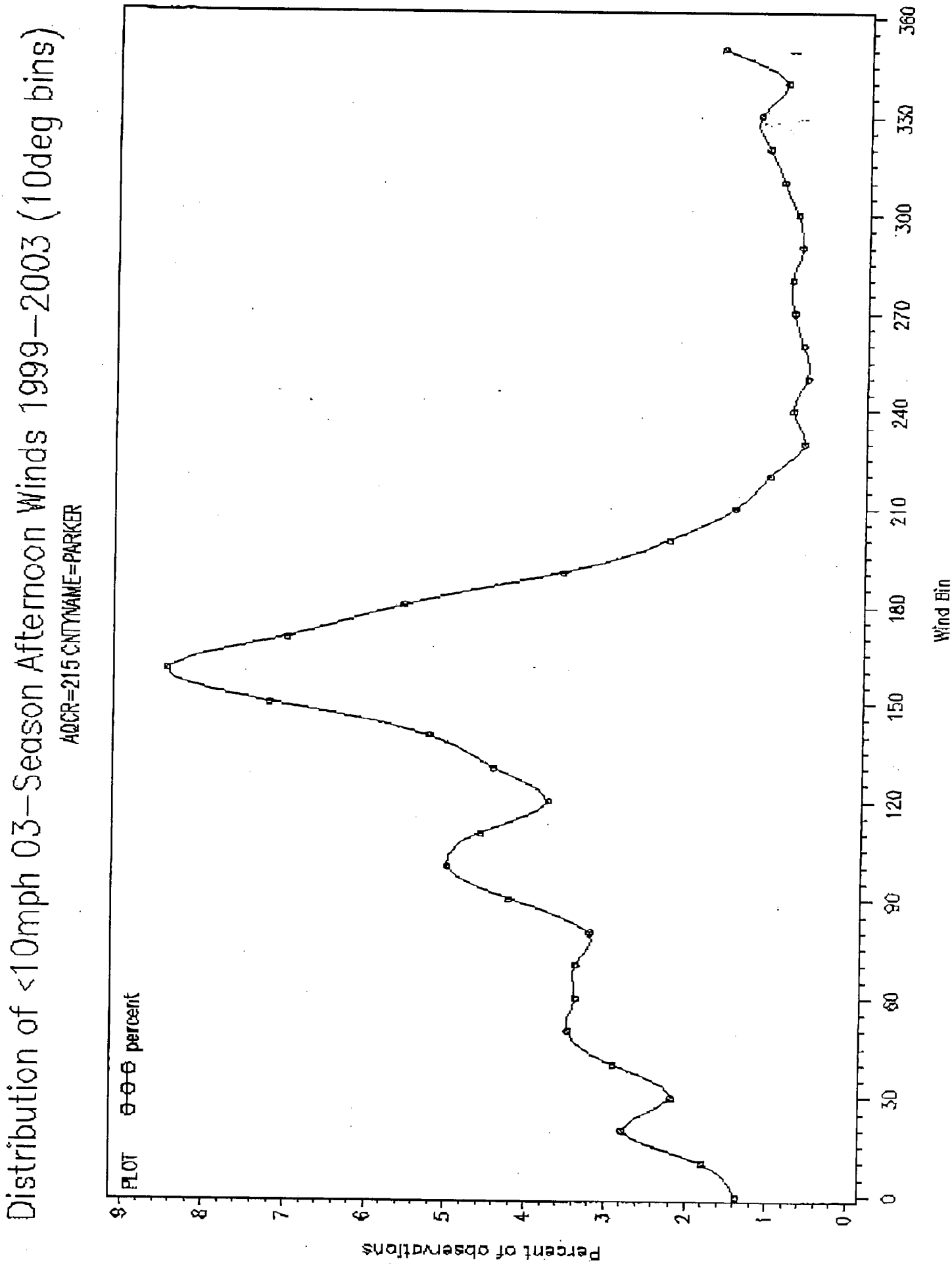

Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=ELLIS
PLOT
percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
0
30
60
90
120
150
180
210
240
270
300
330
360

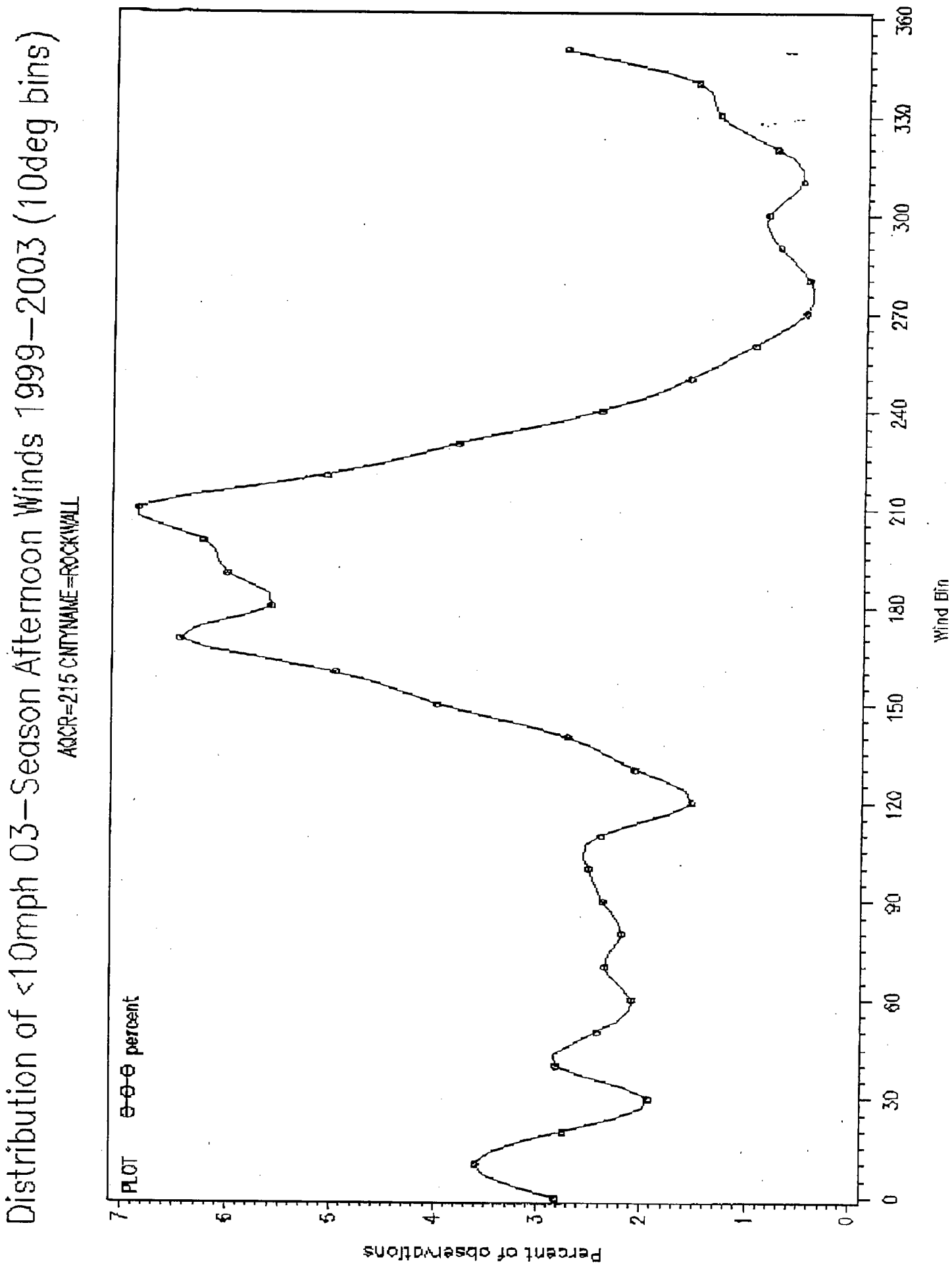

Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=HOOD
PLOT
percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
9
0
30
60
90
120
150
180
210
240
270
300
330
360

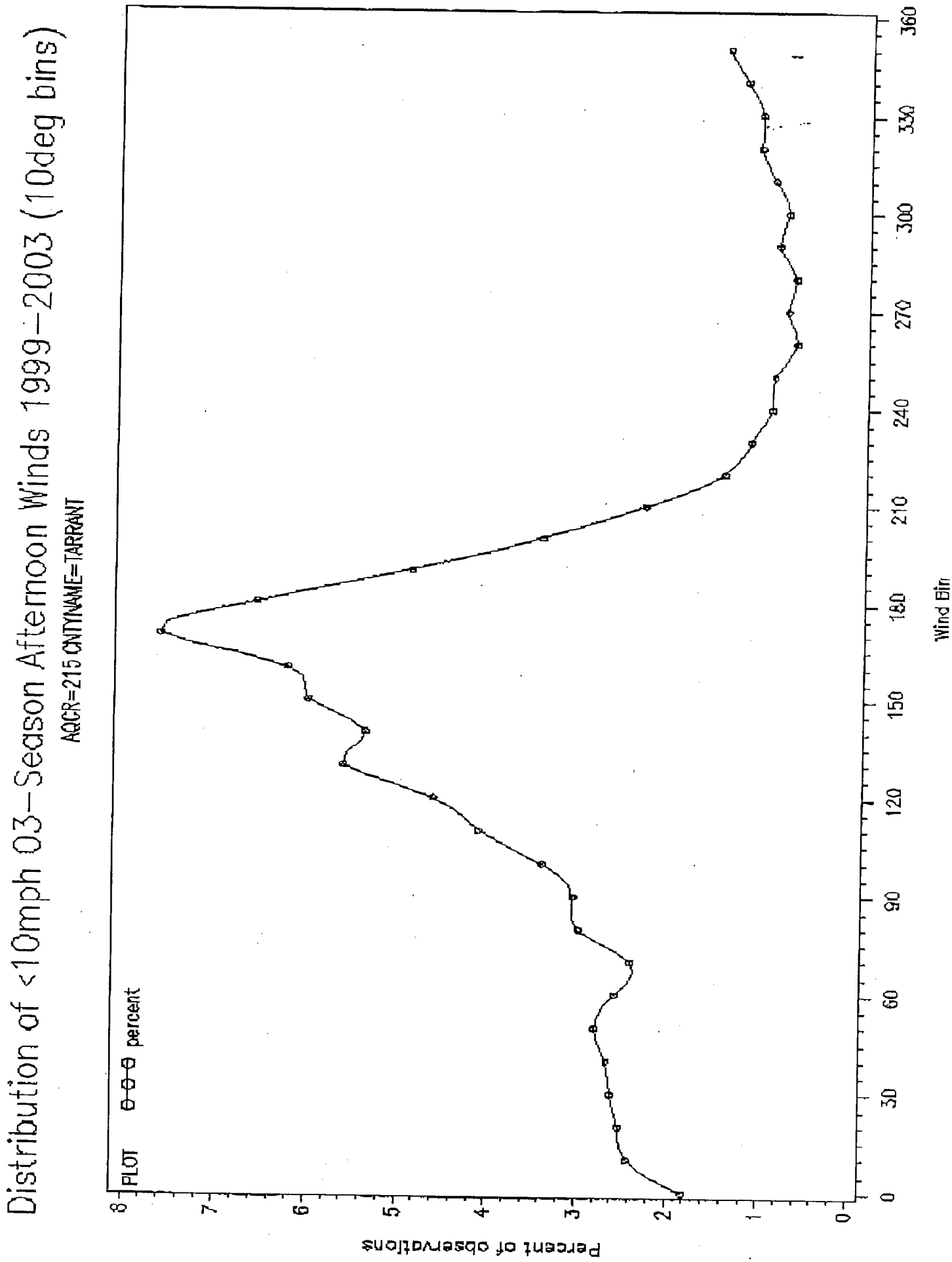

Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
only
AQCR=215 CNTYNAME=HUNT
PLOT percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
9
0
30
60
90
120
150
180
210
240
270
300
330
360


Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=JOHNSON
PLOT
percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
9
10
11
0
30
60
90
120
150
180
210
240
270
300
330
360


Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=KAUFMAN
PLOT percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
9
0
30
60
90
120
150
180
210
240
270
300
330
360


Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=PARKER
PLOT percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
8
9
30
60
90
120
150
180
210
240
270
300
330
360


Distribution of <10mph O3-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=ROCKWALL
PLOT
percent
Percent of observations
Wind Bin
0
1
2
3
4
5
6
7
0
30
60
90
120
150
180
210
240
270
300
330
360


Distribution of <10mph 03-Season Afternoon Winds 1999-2003 (10deg bins)
AQCR=215 CNTYNAME=TARRANT
PLOT percent
Percent of observations
Wind Dir
0
1
2
3
4
5
6
7
8
0
30
60
90
120
150
180
210
240
270
300
330
360

Dallas/Fort Worth Area

1999 VOC tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Collin	0.98	11.71	9.65	21.80	44.14
Dallas	11.70	63.99	54.84	138.70	269.23
Denton	2.12	12.71	7.44	20.70	42.97
Ellis	9.54	12.76	1.64	8.20	32.14
Henderson	0.71	12.97	1.65	3.80	19.13
Hood	0.38	5.97	0.45	1.90	8.70
Hunt	0.09	18.54	1.11	5.40	25.14
Johnson	0.42	12.83	1.36	5.90	20.51
Kaufman	3.08	16.57	0.74	7.20	27.59
Parker	0.76	13.42	0.67	5.80	20.65
Rockwall	0.00	9.17	0.77	2.70	12.64
Tarrant	11.23	48.02	29.64	88.50	177.39
TOTAL	41.01	238.66	109.96	310.60	700.23

1999 NOX tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Collin	5.24	1.54	21.05	33.80	61.63
Dallas	49.40	13.25	71.96	214.90	349.51
Denton	2.93	1.24	17.75	32.00	53.92
Ellis	29.80	0.24	8.74	12.70	51.48
Henderson	7.94	0.12	0.97	5.80	14.83
Hood	24.51	0.05	0.67	2.90	28.13
Hunt	0.39	0.21	1.98	8.30	10.88
Johnson	6.02	0.21	2.21	9.20	17.64
Kaufman	0.86	0.14	1.75	11.20	13.95
Parker	2.77	0.14	1.79	9.00	13.70
Rockwall	0.00	0.08	1.29	4.20	5.57
Tarrant	29.72	6.72	51.82	137.00	225.26
TOTAL	159.58	23.94	181.98	481.00	846.50

2010 VOC tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Collin	1.60	5.77	6.54	13.90	27.81
Dallas	11.80	37.82	32.41	73.10	155.13
Denton	1.80	10.82	6.43	12.50	31.55
Ellis	6.80	7.92	1.64	4.60	20.96
Henderson	0.70	6.20	2.94	1.90	11.74
Hood	0.50	2.12	0.68	1.00	4.30
Hunt	0.10	8.28	1.72	2.50	12.60
Johnson	0.70	6.25	1.33	3.40	11.68
Kaufman	2.40	9.46	1.14	4.10	17.10
Parker	0.10	6.49	1.11	1.60	9.30
Rockwall	0.00	1.51	1.00	1.60	4.11
Tarrant	9.60	35.22	19.80	49.20	113.82
TOTAL	36.10	137.86	76.74	169.40	420.10

2010 NOX tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Collin	3.90	1.85	15.91	22.80	44.46
Dallas	11.60	13.77	49.35	120.00	194.72
Denton	1.30	2.91	6.66	20.50	31.37
Ellis	40.10	0.28	10.47	7.60	58.45
Henderson	8.10	1.83	1.05	3.10	14.08
Hood	15.40	1.81	0.54	1.70	19.45
Hunt	0.50	0.25	2.44	4.10	7.29
Johnson	4.80	0.28	8.39	5.60	19.07
Kaufman	10.50	0.19	4.61	6.70	22.00
Parker	4.60	6.72	0.89	5.40	17.61
Rockwall	0.00	0.13	0.91	2.60	3.64
Tarrant	8.90	6.99	46.02	80.80	142.71
TOTAL	109.70	37.01	147.24	280.90	574.85

San Antonio Area

1999 VOC tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Bexar	4.61	97.49	23.20	73.90	199.20
Comal	0.49	4.47	2.09	6.30	13.35
Guadalupe	0.24	14.81	1.57	5.70	22.32
Wilson	0.00	3.55	0.21	1.60	5.36
TOTAL	5.34	120.32	27.07	87.50	240.23

1999 NOX tons/day

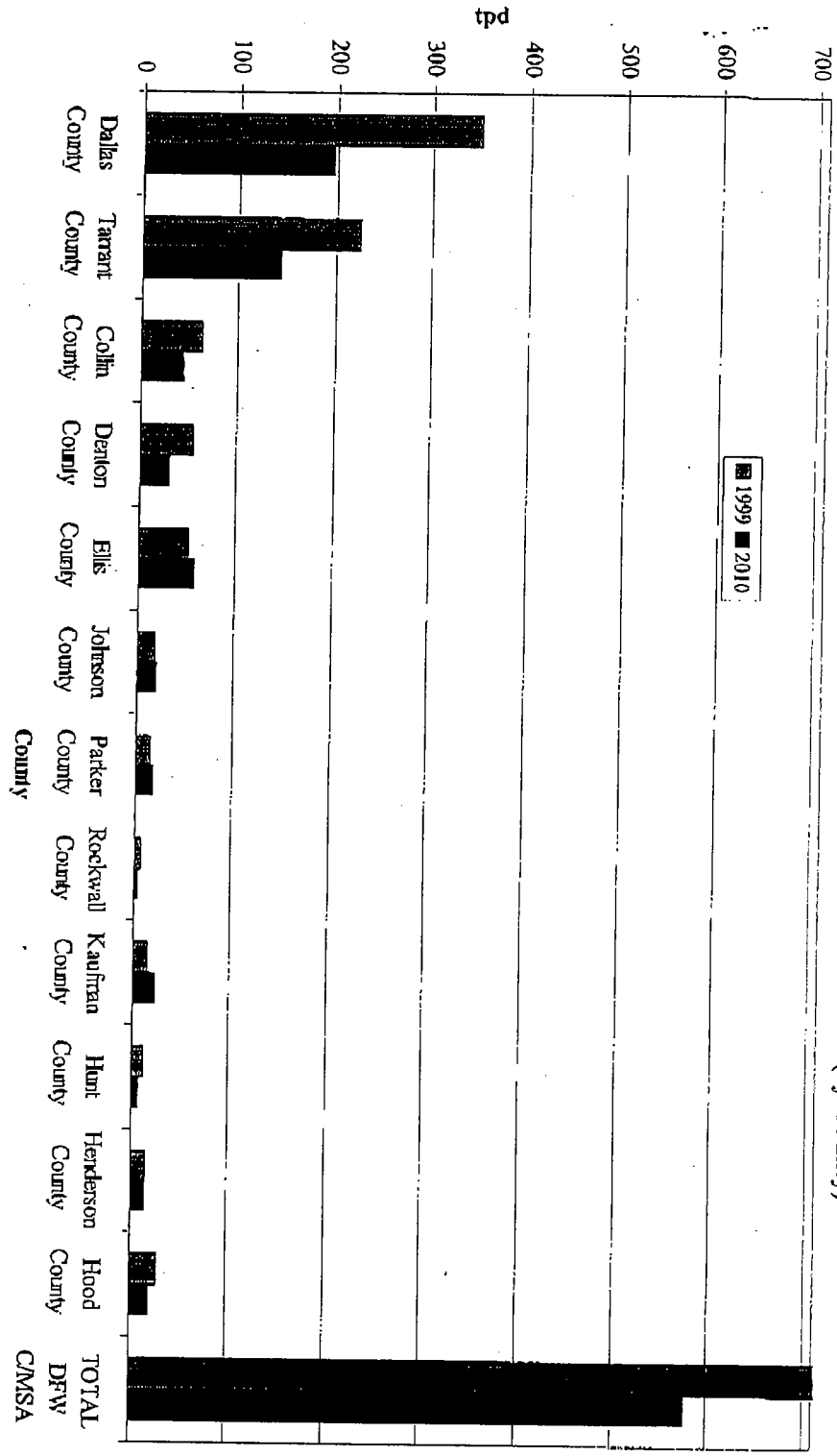
County	Point	Area	Nonroad	Onroad	TOTAL
Bexar	91.61	5.06	24.79	114.40	235.86
Comal	12.10	0.16	1.96	9.80	24.02
Guadalupe	0.32	0.11	8.61	8.80	17.84
Wilson	0.00	0.06	1.05	2.40	3.51
TOTAL	104.03	5.39	36.41	135.40	281.23

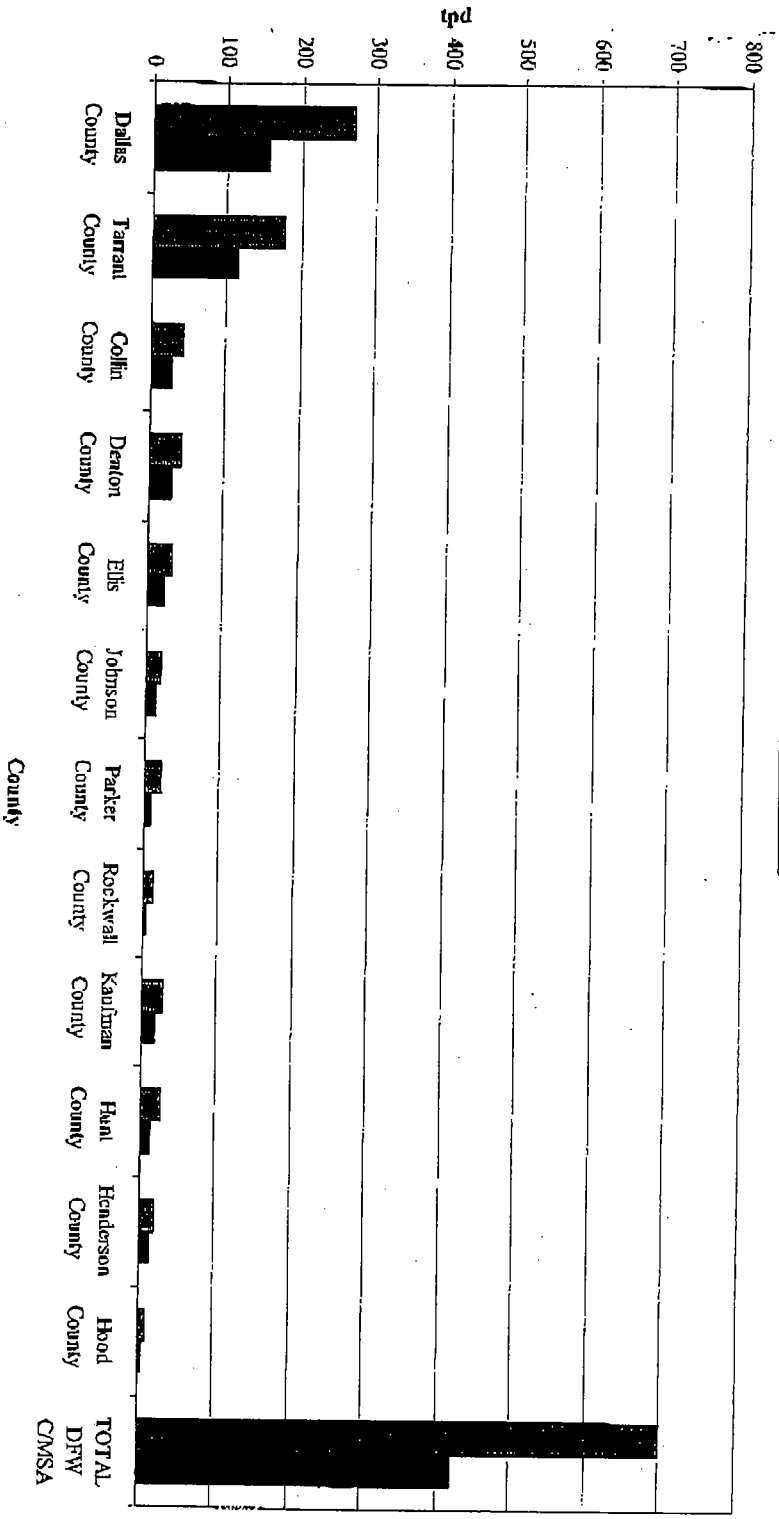
2007 VOC tons/day

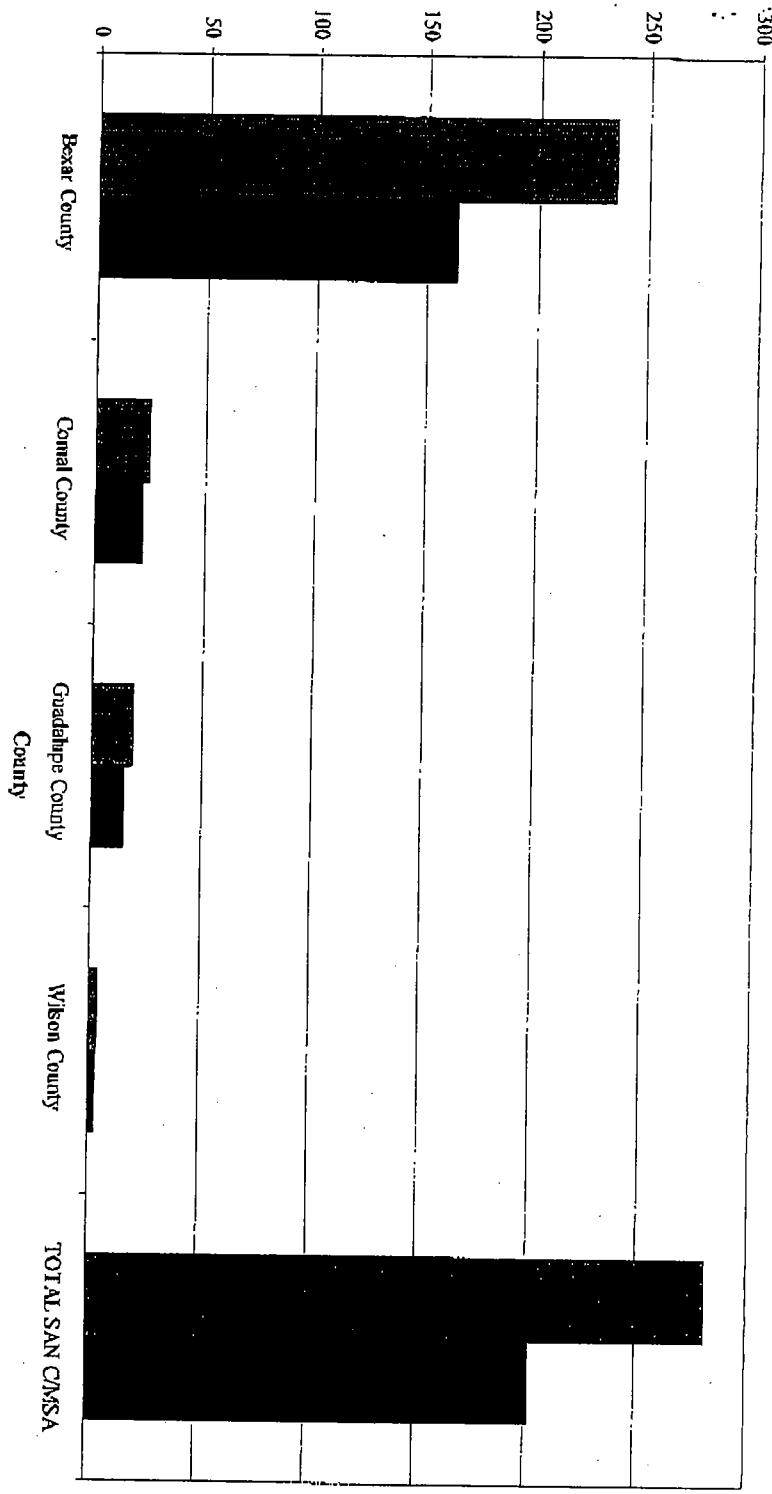
County	Point	Area	Nonroad	Onroad	TOTAL
Bexar	4.80	80.50	14.60	49.00	148.90
Comal	0.50	5.25	1.57	4.30	11.62
Guadalupe	1.00	12.03	1.10	3.90	18.03
Wilson	0.00	3.59	0.26	1.10	4.95
TOTAL	6.30	101.37	17.53	58.30	183.50

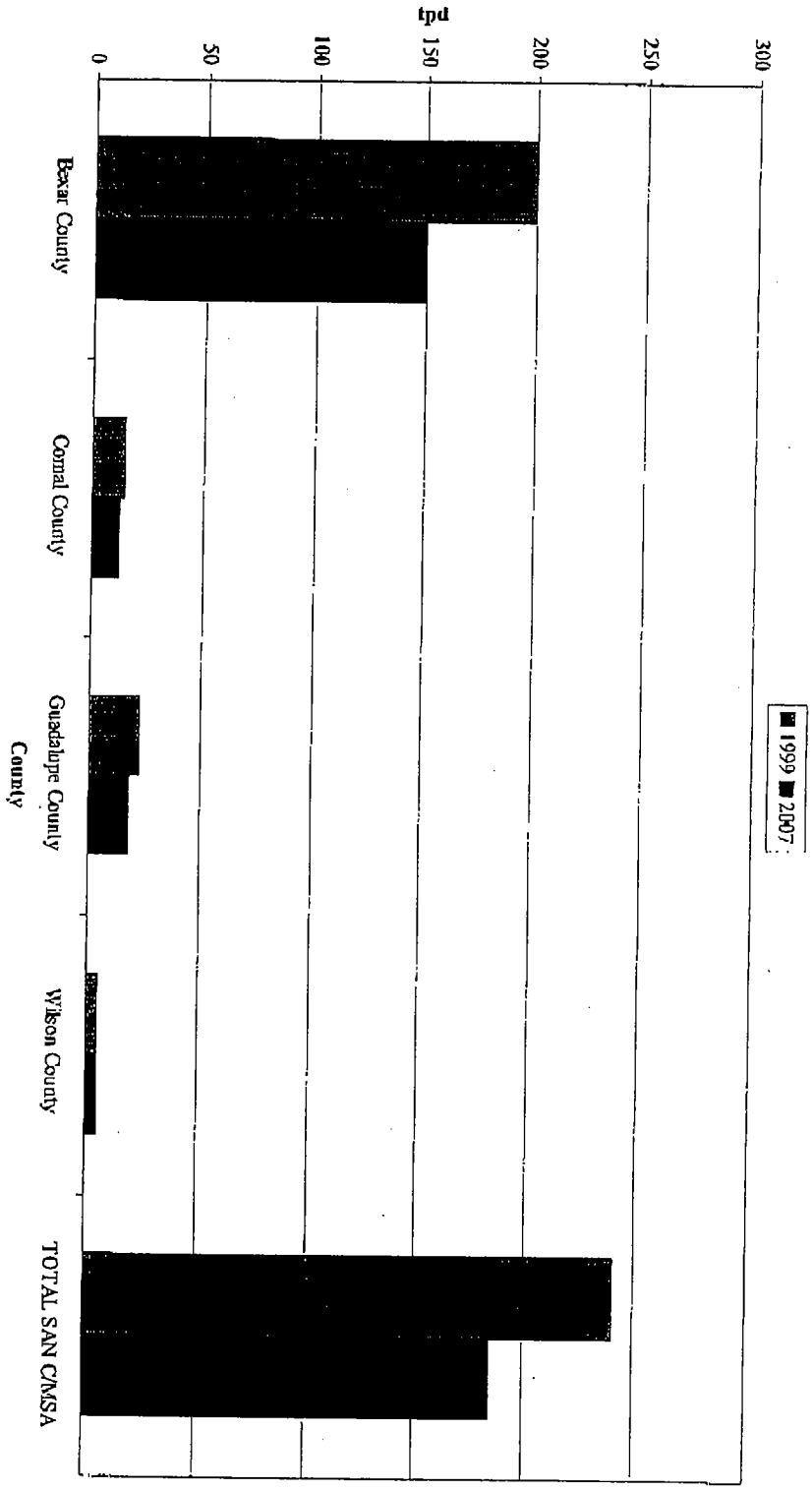
2007 NOX tons/day

County	Point	Area	Nonroad	Onroad	TOTAL
Bexar	59.90	3.23	16.45	83.50	163.08
Comal	12.70	0.16	1.10	7.30	21.26
Guadalupe	4.80	0.16	3.79	6.60	15.35
Wilson	0.00	0.07	0.86	1.80	2.73
TOTAL	77.40	3.62	22.20	99.20	202.42


1999 and 2010 NOx Emission Estimates for the Dallas/Fort Worth Area (by County)
1999
2010
tpd
700
600
500
400
300
200
100
0
Dallas County
Tarrant County
Collin County
Denton County
Ellis County
Johnson County
Parker County
Rockwall County
Kaufman County
Hunt County
Henderson County
Hood County
TOTAL DFW C/MSA
County


1999 and 2010 VOC Emission Estimates for the Dallas/Fort Worth Area (by County)
1999
2010
tpd
800
700
600
500
400
300
200
100
0
Dallas County
Tarrant County
Collin County
Denton County
Ellis County
Johnson County
Parker County
Rockwall County
Kaufman County
Hunt County
Henderson County
Hood County
TOTAL DFW CMSA
County


1999 and 2007 NOx Emission Estimates for the San Antonio Area (by County)
1999
2007
tpd
300
250
200
150
100
50
0
Bexar County
Comal County
Guadalupe County
Wilson County
TOTAL SAN C/MSA


1999 and 2007 VOC Emission Estimates for the San Antonio Area (by County)
1999
2007
tpd
300
250
200
150
100
50
0
Bexar County
Comal County
Guadalupe County
Wilson County
TOTAL SAN C/MSA